

Air handling unit with heat recovery

izzi 302 ERV R (L)



Table of Contents

01	General information.....	3	07.12	The alarm panel signal	17
01.01	Safety	3	07.13	Switch at the hood	18
01.02	Warranty and liability	3	07.14	The fire alarm panel signal	18
01.03	Disposal.....	3	07.15	Fireplace mode bell button	18
02	Product Description	3	07.16	External signal control 0-10V	18
02.01	Design of the iZZi 302 ERV R air handling unit (version right).....	4	08	Driver manual with touch pad	19
02.01.1	Rating plate	4	08.01	Basic features of the controller	19
02.02	Recuperator operation method.....	5	08.02	Main screen and operating mode presentation.....	19
02.03	Bypass.....	5	08.03	OPTIONS screen	21
02.04	Enthalpy heat exchanger.....	5	08.04	Working modes and performance settings	21
02.05	Freeze protection system	6	08.04.1	TURBO MODE.....	21
03	Technical Data	6	08.04.2	OUT OF HOME mode.....	21
03.01	Flow characteristics	7	08.04.3	FIREPLACE mode	21
03.02	Technical drawing of the recuperator.....	7	08.04.4	AUTOMATIC mode	21
04	Scope of delivery.....	8	08.04.5	SCHEDULE mode.....	22
04.01	Equipment.....	8	08.04.6	OPERATING MODE SETTINGS.....	22
04.02	Optional equipment	8	08.04.6.1	SCHEDULE MODE SETTINGS	22
05	Planning.....	9	08.04.6.2	Manual mode speeds	22
05.01	Methods of assembly	9	08.04.6.3	Programming manual mode gears.....	22
05.01.1	On the floor vertically.....	9	08.04.6.4	Software-based performance correction.....	23
05.01.2	On the floor horizontally	9	08.05	SETTINGS screen	23
05.01.3	On the wall	9	08.05.1	Time and Date Settings.....	23
05.01.4	On the ceiling.....	9	08.05.2	Sound level and brightness settings	24
05.02	Requirements for the assembly location	9	08.05.3	Language settings	24
05.03	Electrical connection.....	9	08.05.4	Inspection of filters condition	24
05.04	Control panel	9	08.05.5	Factory settings	24
05.05	Area Safe	10	08.05.6	Icon descriptions.....	25
05.06	5.6 Anti-smog filter box - option.....	10	08.06	Peripherals and work control	25
06	Assembly.....	11	08.06.1	Control of the operation of the duct heater	25
06.01	Frame assembly.....	11	08.06.2	HYGRO / CO2 module support	25
06.02	Assembly of recuperator on frame	11	08.06.3	Control of the operation of the duct cooler.....	25
07	Automation.....	12	08.06.4	Controlling the operation of the ground heat exchanger (GWC).....	26
07.01	iZZi (model KR-04) control engineering diagrams ...	12	08.06.5	Control of bypass operation	26
07.02	Control engineering revision	13	08.06.6	Support for fixed flow module	26
07.03	Touch panel	13	08.07	Unit status.....	27
07.04	Ground exchanger Heat	13	08.07.1	Ventilation system temperature control screen.....	27
07.05	Duct reheater	14	08.07.2	STANDBY screen.....	27
07.05.1	Electric reheater.....	14	08.08	Alerts and messages.....	28
07.05.2	Water reheater	15	08.08.1	Defrosting	28
07.06	Duct cooler	15	08.08.2	Check filters	28
07.06.1	Water duct cooler	15	08.08.3	Sensor damage.....	28
07.07	Simultaneous connection of cooler and reheater	16	09	Service and maintenance.....	28
07.08	Preheater	16	09.01	Filter replacement	28
07.09	IZZi constant flow module (recommended).....	17	09.02	Removing the recuperator cover	29
07.10	CO2/hygro iZZi module.....	17	09.03	FAQ.....	29
07.11	Ventilation bell button (turbo).....	17	10	Warranty Conditions.....	30

01 General information

Congratulations on purchasing the iZZi 302 ERV compact recuperator. Please read the manual before the installation of the equipment. Observation of these guidelines ensures optimal performance and long service life. Each shipment is thoroughly inspected before leaving the production facility.

01.01 Safety

This equipment should not be operated by persons (in particular children) with reduced mobility or with limited physical abilities or people without proper sufficient experience or knowledge unless they are supervised or instructed by appropriate persons (for safety reasons) on the method of safe use of the equipment. Children should use the equipment accompanied by adults to ensure that they do not play with the product.

01.02 Warranty and liability

The manufacturer shall not be liable for any damages resulting from misuse, improper transport or handling. **Note! Please check that no damage occurred during transportation. Subsequent complaints shall not be accepted!** Check completeness of the shipment prior to installation. List of elements is given in item 04.01. **Selection of assembly screws and dowels depends on the material of the wall!** The manufacturer reserves the right to introduce technical and colour changes! All dimensions are given in mm! The warranty terms and conditions are given in item 10.

The manufacturer shall not be responsible for any damages that may result from:

- non-observance of the operation, safety and maintenance instructions given in this manual.
- installation not in accordance with the good building practice and the recommendations given in the operating instructions for the equipment
- use of spare parts, which have not been delivered or recommended by the manufacturer,
- contamination of ventilation system,
- normal wear and tear.

01.03 Disposal

Do not dispose of worn products with normal household waste. They must be transferred to a special materials recovery facility or the seller who provides such services.



Incorrect disposal of the product by the user is subject to administrative penalties in accordance with the applicable regulations.

02 Product Description

iZZi 302 ERV is an air handling unit with heat recovery intended to ensure safe, balanced, energy-efficient and comfort ventilation in the residential buildings. For mechanical ventilation with heat recovery a vitiated air with odour, e.g. from the kitchen, bathroom, WC is extracted and the same amount of fresh air is supplied to, among others, a living room, bedroom and children's room.

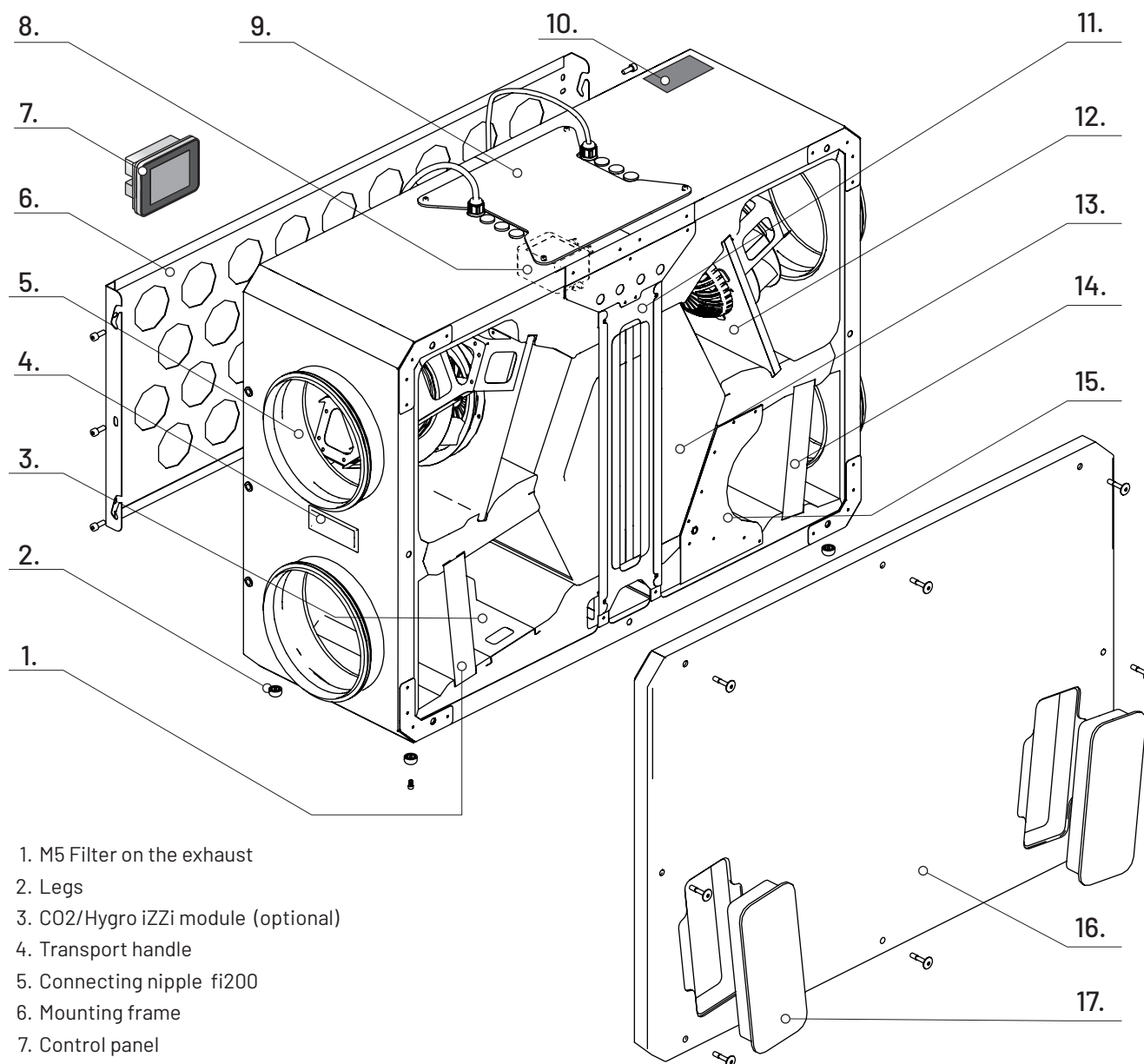
A countercurrent membrane heat and moisture exchanger (enthalpy heat exchanger), recovering both moisture and heat from the extracted air, is used for heat recovery in iZZi 302 ERV. It is recommended to use humidity sensors to monitor limit value in the rooms where the humidity level is high.

Use of enthalpy heat exchanger ensures that it is not necessary to connect the condensate outlet to the equipment. Lack of condensate outdropping on the heat exchanger allows its operation also during negative temperatures outside the building. Therefore it is not equipped with a built-in preheater.

The compact housing is made of stainless steel sheet and has universal mounting system: under the ceiling, on the wall or on the floor. internal cladding is made of high-quality polyethylene foam and ensures required thermal and noise insulation. iZZi 302 ERV recuperator has two service-free energy-efficient direct current fans (EC) ensuring high available compression. Standard equipment includes also built-in 100% automatic bypass of heat exchanger. The unit is factory equipped with two pleated filters, class M5 (ePM10 75%)

02.01 Design of the iZZi 302 ERV R air handling unit (version right).


Note! Majority of drawings, descriptions and assembly of the recuperator are given for right (R) version. For the left (L) version you should proceed in the same way - unless otherwise stated.



1. M5 Filter on the exhaust
2. Legs
3. CO2/Hygro iZZi module (optional)
4. Transport handle
5. Connecting nipple fi200
6. Mounting frame
7. Control panel
8. IZZi constant flow module (optional)
9. Access cover for control engineering
10. Rating plate
11. Heat exchanger protection
12. Radical centrifugal fans with EC DC motors (ebm-papst)
13. Enthalpy heat exchanger
14. M5 filter on the intake
15. Bypass unit
16. Housing cover
17. Filter Cap

02.01.1 Rating plate

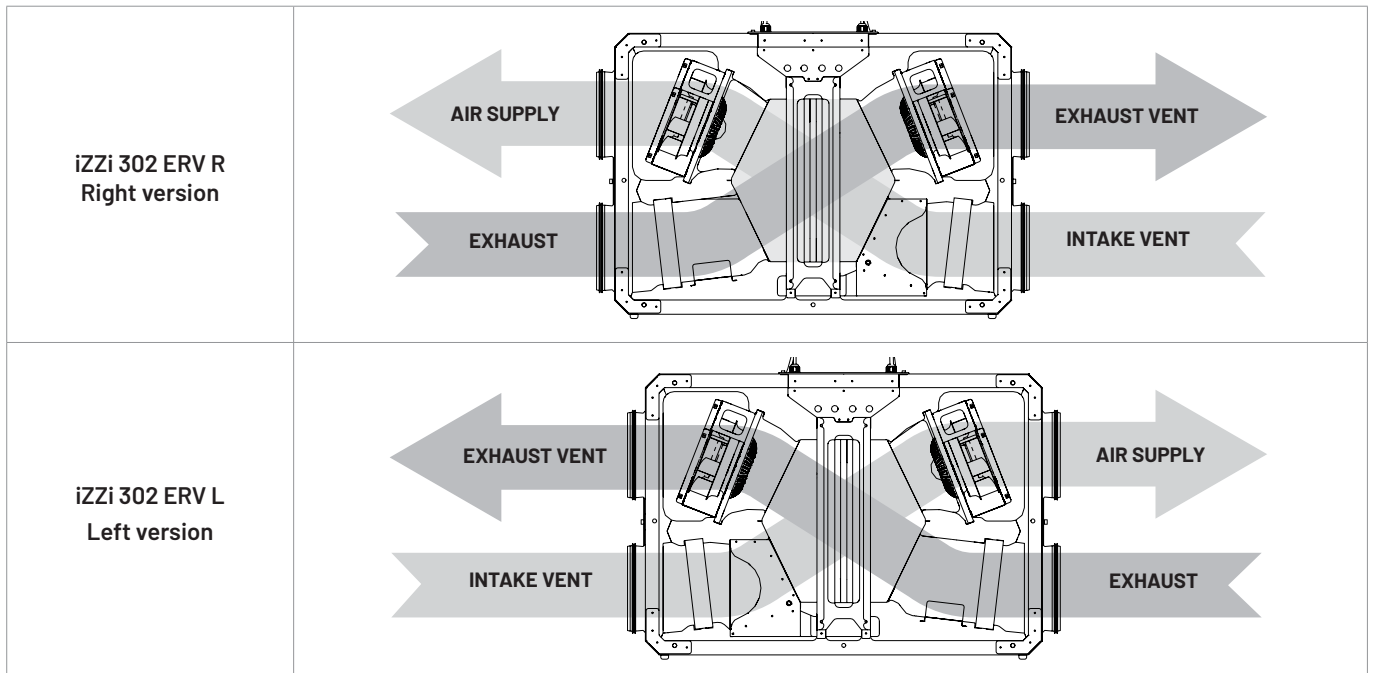
The rating plate is located on the upper wall of the housing, next to electrical service lines (figure above). It is used for identification of the product. The information contained herein is needed for safe use of the product and service purposes. The nameplate should not be covered or removed from the unit.

 S/N: 030101 0101 0100 1120 609975	
iZZi 302 ERV R 	
Rok produkcji	2020
Wydatek nominalny	300 [m3/h]
Spręż dysp. nominalny	150 [Pa]
Klasa filtra powietrza	M5
Napięcie zasilania	230V AC 50Hz
Moc wentylatorów	170 [W]
Moc nagrz. wstępnej	-
Stopień ochrony	IP40

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02.02 Recuperator operation method.

The equipment has been designed and manufactured as a unit intended for ventilation of the residential rooms with areas up to 100m² and allows maximum air exchange approx. 300 m³ of the air per hour. The recuperator should be selected not only for the area of the given room, but also considering air exchange demands.



EXHAUST: used up air is exhausted from the rooms, that is kitchen, toiler or bathroom through AIR EXHAUST

EXHAUST VENT: air cooled down in the exchanger is extracted outside via EXHAUST VENT

INTAKE VENT: fresh air drawn from outside by a duct marked as INTAKE VENT is directed to heat exchanger

AIR SUPPLY: supplied air from outside, heated in heat exchanger is supplied to the rooms by the AIR SUPPLY

02.03 Bypass

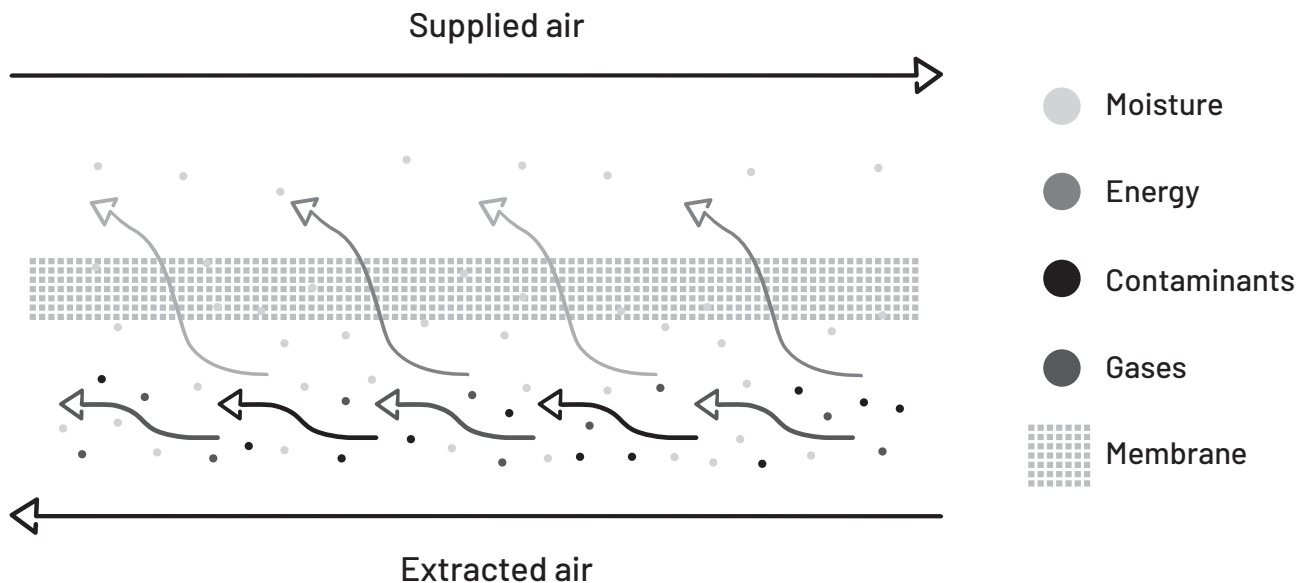
The built-in automatic bypass allows used air to be discharged to the outside without a heat exchanger, so that heat is not released to the supplied air. Such a solution allows using free-cooling phenomena during the summer. The bypass settings are described in item 08.06.5.



Due to installation and recuperator protection, the bypass cannot be opened when the outside temperature is lower than 10°C.

02.04 Enthalpy heat exchanger

The device is equipped with a counter-current enthalpy heat exchanger with a polymer membrane. Air removed from the building gives the thermal energy and moisture back to the fresh air stream supplied to the building, without mixing. The membrane of heat exchanger separates two air streams and have a thin, dense polymer barrier layer, allowing absorption of the water vapors and penetration through it. At the same time, it blocks gases, volatile organic compounds and other pollutants. The material of the heat exchanger ensures its high durability.



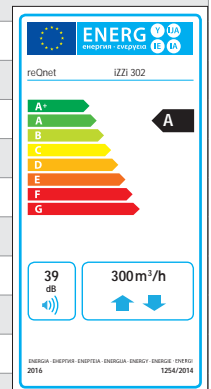
02.05 Freeze protection system

Freeze protection system protects heat exchanger against frost formation at low external temperatures. The use of specially designed enthalpy heat exchanger, recovering the moisture in the iZZi 302 ERV recuperator, this phenomena can occur only during the very high frosts, when the outdoor temperature drops below approx. minus 7°C. In such a case, the heat exchanger defrosting mode is activated periodically. It is based on automatic lowering of speed of the air supply fan and activation of optional duct preheater (if connected).

Note! Do not turn on recuperator in winter. It may freeze the exchanger or flood the device

03 Technical Data

Model	iZZi 302 ERV		
Maximum air expenditure	300 m ³ /h at 150 Pa		
Heat recovery efficiency	up to 95%*		
Exchanger type	cross-current		
Type of exchanger	enthalpic (with moisture recovery)		
Exchanger material	plastic + polymer membrane		
Moisture recovery efficiency	up to 65%		
Maximum fan power	165 W		
Runs	1st speed (90 m ³ /h at 30 Pa)	2nd speed (180 m ³ /h at 100 Pa)	3rd speed (300 m ³ /h at 150 Pa)
Energy consumption	26 W	60 W	165 W
Sound power level emitted by the housing at a distance of 1 meter	30 dB(A)	39 dB(A)	46 dB(A)
Fans	Radial Redical with DC EC motors (ebm-papst)		
Energy efficiency class	A**		
Bypass	automatic, insulated, 100% bypass of supplied air		
Freeze protection system	operating only below -7°C		
Driver	3.2" LCD with colour touch panel		
Connect the controller to the device	Shielded cable 4x0.5*** (3 meters included in the set)		
Filters	pleated class M5**** / ePM10 75%*****		
Diameter of connectors	4 x Ø200 mm		
Condensate drain	none		
Protection	IP 40		
Device insulation class	I		
Supply voltage	230V (AC), 50Hz		
Weight (with dedicated rack)	26+2 kg		
Dimensions (high x width x head)	336 x 889 x 630 mm		
Equipment	3.2" LCD with colour touch panel connection nipples Ø200 mm made out of stainless steel power cable 2.8 m controller cable 3 m stainless steel mounting console for wall/ceiling installation		
Optional peripherals	constant flow module CO2/hygro module Turbo button electric duct preheater electric duct reheater throttle actuator GWC duct cooler		



* IZZi 302 ERV recuperator due to enthalpy heat exchanger does not meet the requirements of the "Czyste powietrze 2019" programme for applications submitted before 15.05.2020

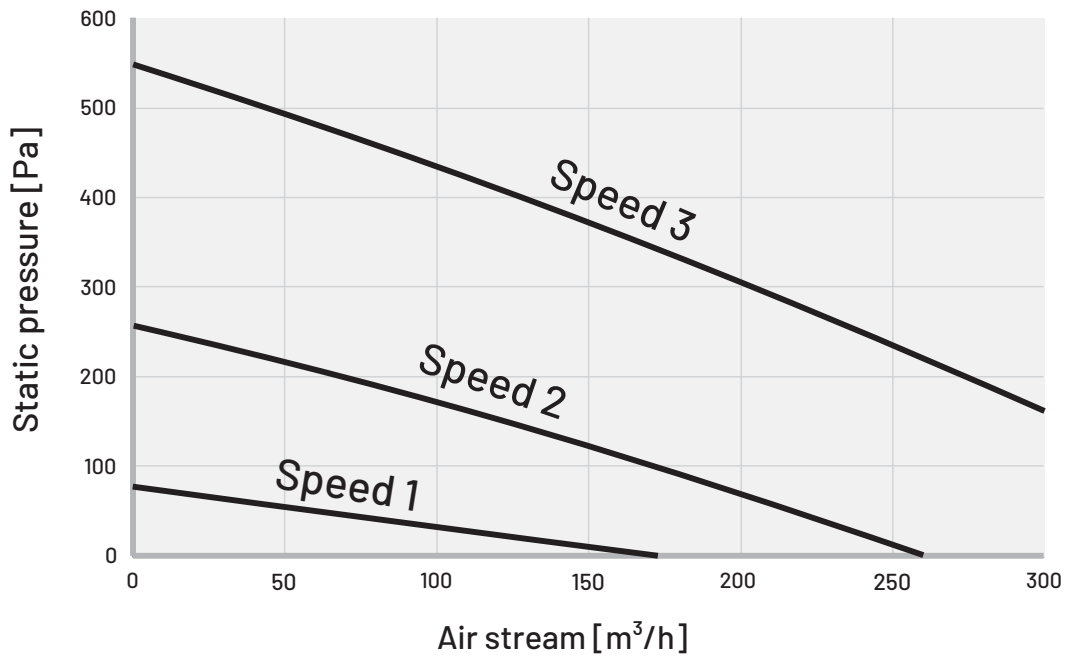
** for a moderate climate in accordance with Directive 2009/125/EC and Regulation (EC) No 1254/2014 of the European Commission

*** above length 10 m recommended 4x0.75 (shielded)

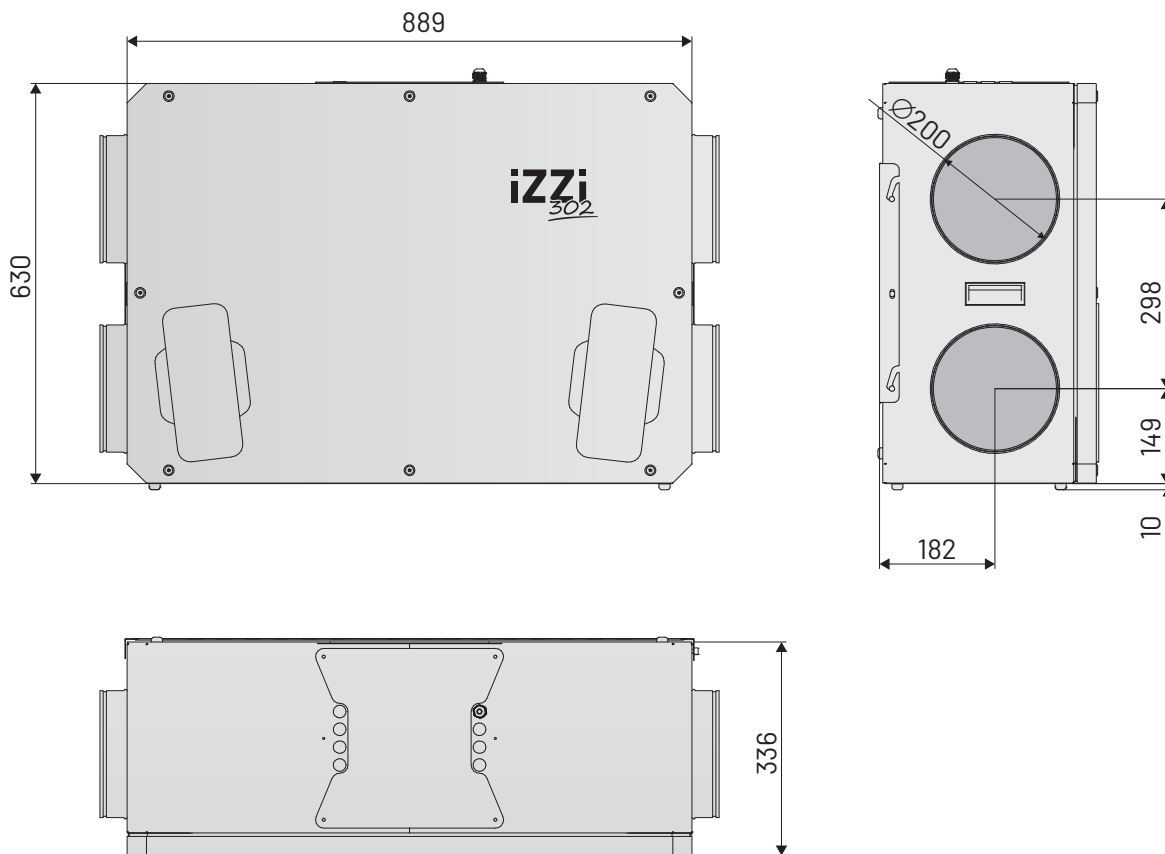
**** according to EN779

***** according to ISO 16890

03.01 Flow characteristics

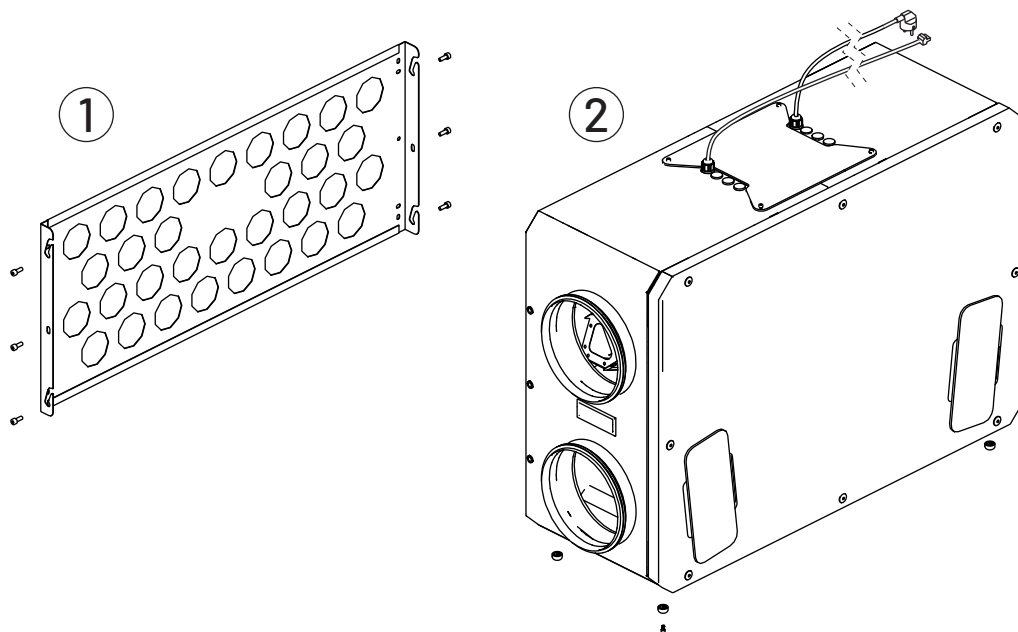


03.02 Technical drawing of the recuperator

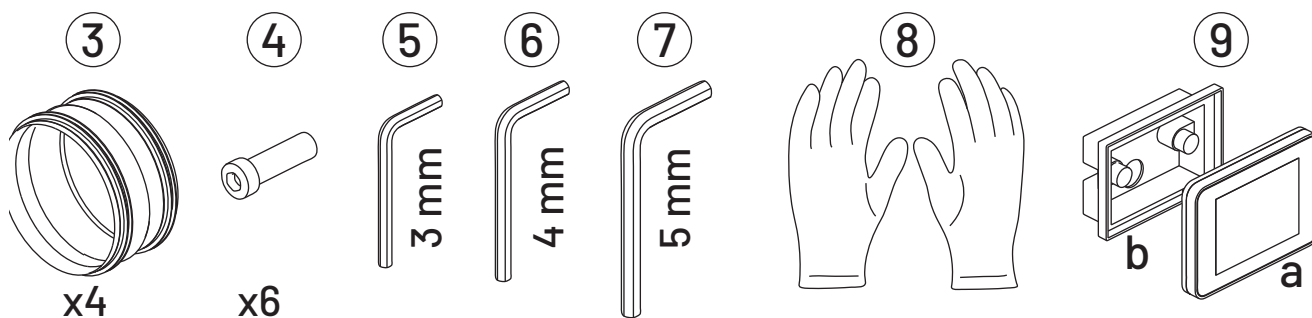


04 Scope of delivery

04.01 Equipment



	Description
1	Support frame
2	Recuperator
3	Nipple fi200(x4)
4	Screw M6(x6)
5	Allen key bolt3mm
6	Allen key bolt 4mm
7	Allen key bolt 5mm
8	Gloves(x2)
9	Control panel (a) with mounting box (b) and signal cable (3 m)



04.02 Optional equipment

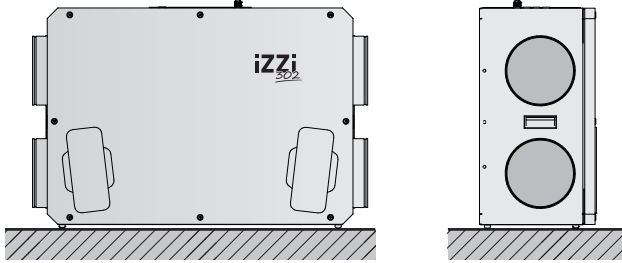
	<p>IZZi SF200 anti-smog filter box with a set of M5 and F9 filters</p>	
<p>CO2/hygro module automatic control of recuperator performance based on home air quality</p>	<p>Constant flow module for automatic balancing of the supply and exhaust flux in the ventilation system</p>	<p>Signal cable (15 m) for IZZi 300/302 ERV control panel</p>

05 Planning

05.01 Methods of assembly

Use of enthalpy heat exchanger, which does not require discharge of condensate, allows distinguishing four methods of recuperator foundation:

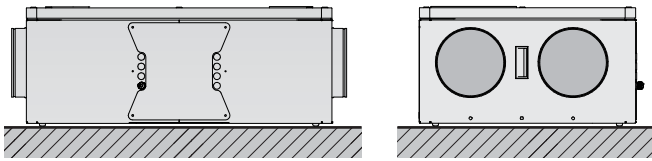
05.01.1 On the floor vertically



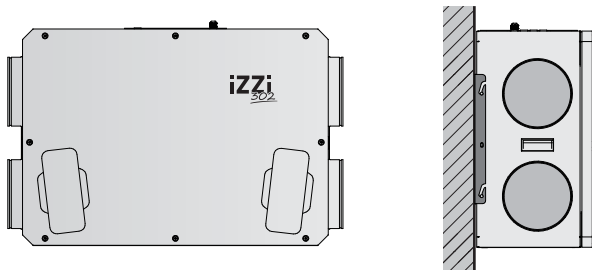
Note: Additional height increases on your own.

05.01.2 On the floor horizontally

The legs are pre-installed "from below", in case of mounting on the floor, please unscrew and mount the feet "on the back" with an allen attached to the set.

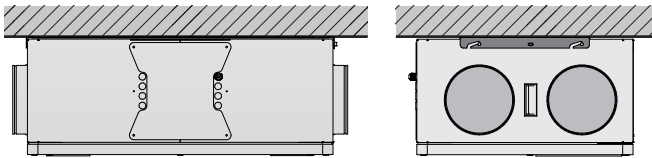


05.01.3 On the wall



Assembly on the wall should be carried out using a special frame from a scope of delivery.

05.01.4 On the ceiling



Assembly on the wall should be carried out using a special frame from a scope of delivery.

05.02 Requirements for the assembly location

The iZZi 302 ERV recuperator is intended for assembly in the rooms where the temperature does not fall below 5°C, and relative humidity does not exceed 70% during winter.

The prepared substrate should ensure even and stable adhesion of the recuperator. For proper operation, the manufacturer recommends mounting on a solid wall/ceiling or, in the absence of such surface, on a suitably reinforced surface which does not transmit any vibrations.

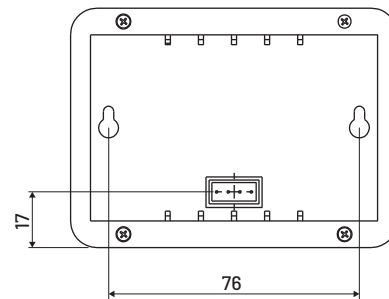
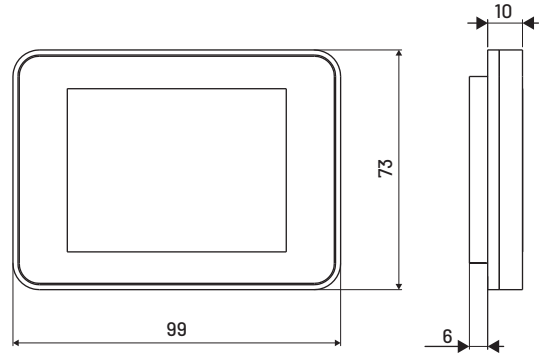
05.03 Electrical connection

Electrical service lines 230V with grounding (plug socket) should be prepared in a maximum distance of 2.5 metres from conductor's outlet from the recuperator.

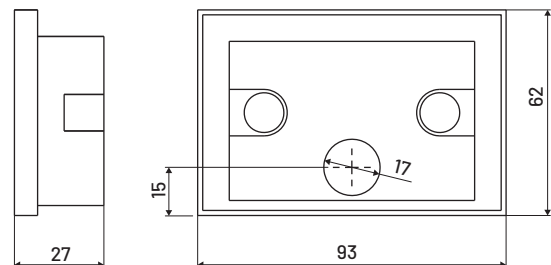
05.04 Control panel

The enclosed control panel allows flush-mounting or wallmounting (using the enclosed dedicated mounting box) - according to the drawings below. Factory supplied cable of the controller has 3 metres - details in paragraph 07.03.

Dimensions required for assembly directly on the wall:



Dimensions required for flush-mounting in the box



05.05 Area Safe

When planning the space for the installation of the recuperator, please consider the appropriate free and easily accessible space in front of and above the recuperator for service and operation purposes.

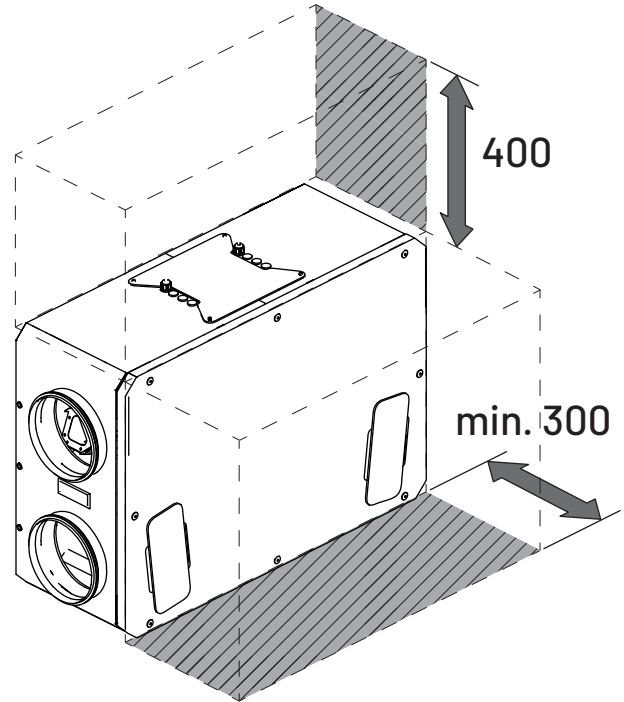


Ventilation ducts (rigid or flexible) should be connected to the recuperator using dedicated nipples.

It is recommended to maintain the appropriate length of straight sections when connecting the ducts to the air handling unit (in particular the exhaust and supply ducts).

Sharp bend installed right next to the device may lead to high installation resistance and a decrease in the maximum efficiency of the recuperator.

Warning! All recuperator ducts should be properly insulated.

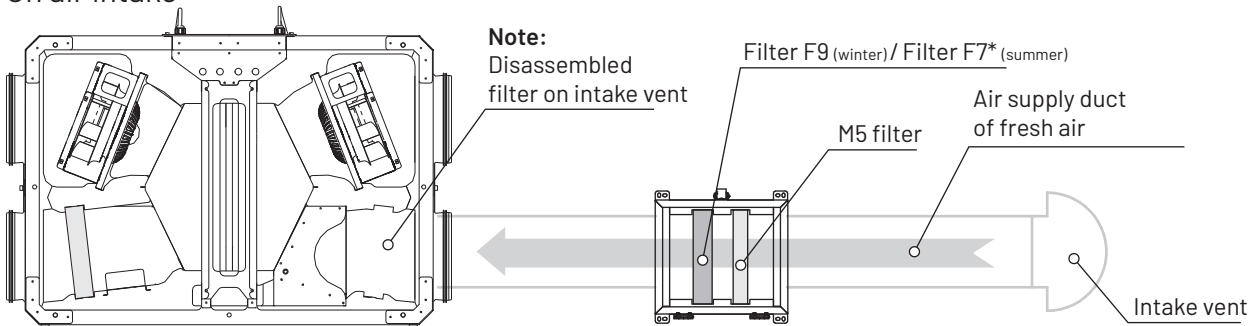


05.06 5.6 Anti-smog filter box - option

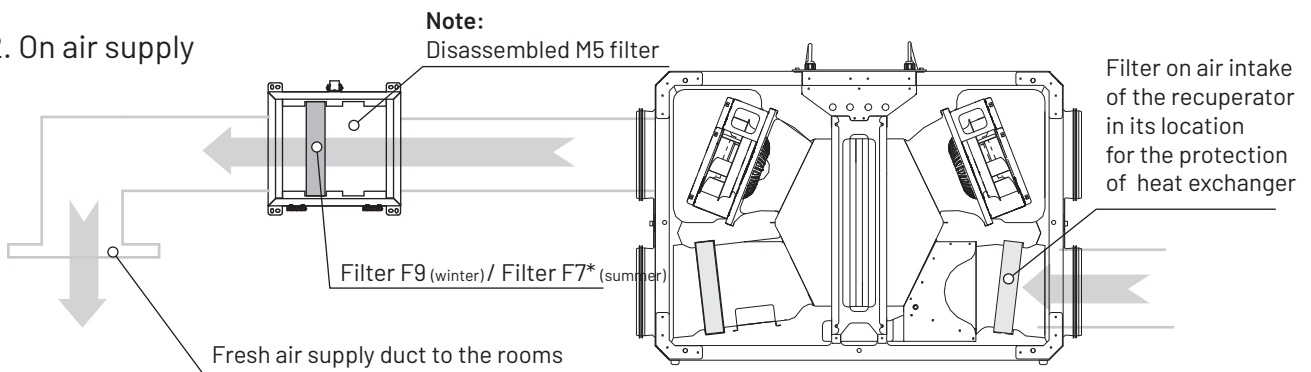
If additional filter box is used then it is necessary to plan additional space near the recuperator (from the side of air intake vent or air supply to the rooms).

Note! The layout of the boxes is shown for the right version (R), for the left version (L) the reverse direction of air flow in the recuperator must be taken into account - see section 02.02 "How the recuperator works".

1. On air intake



2. On air supply

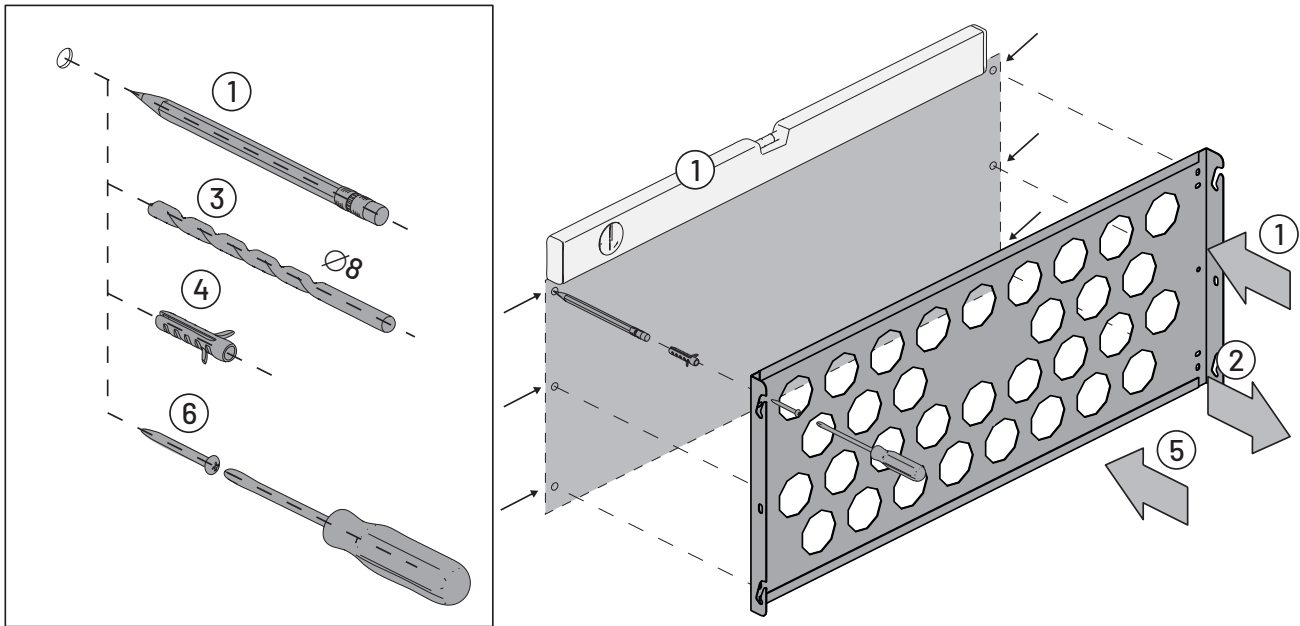


* - option

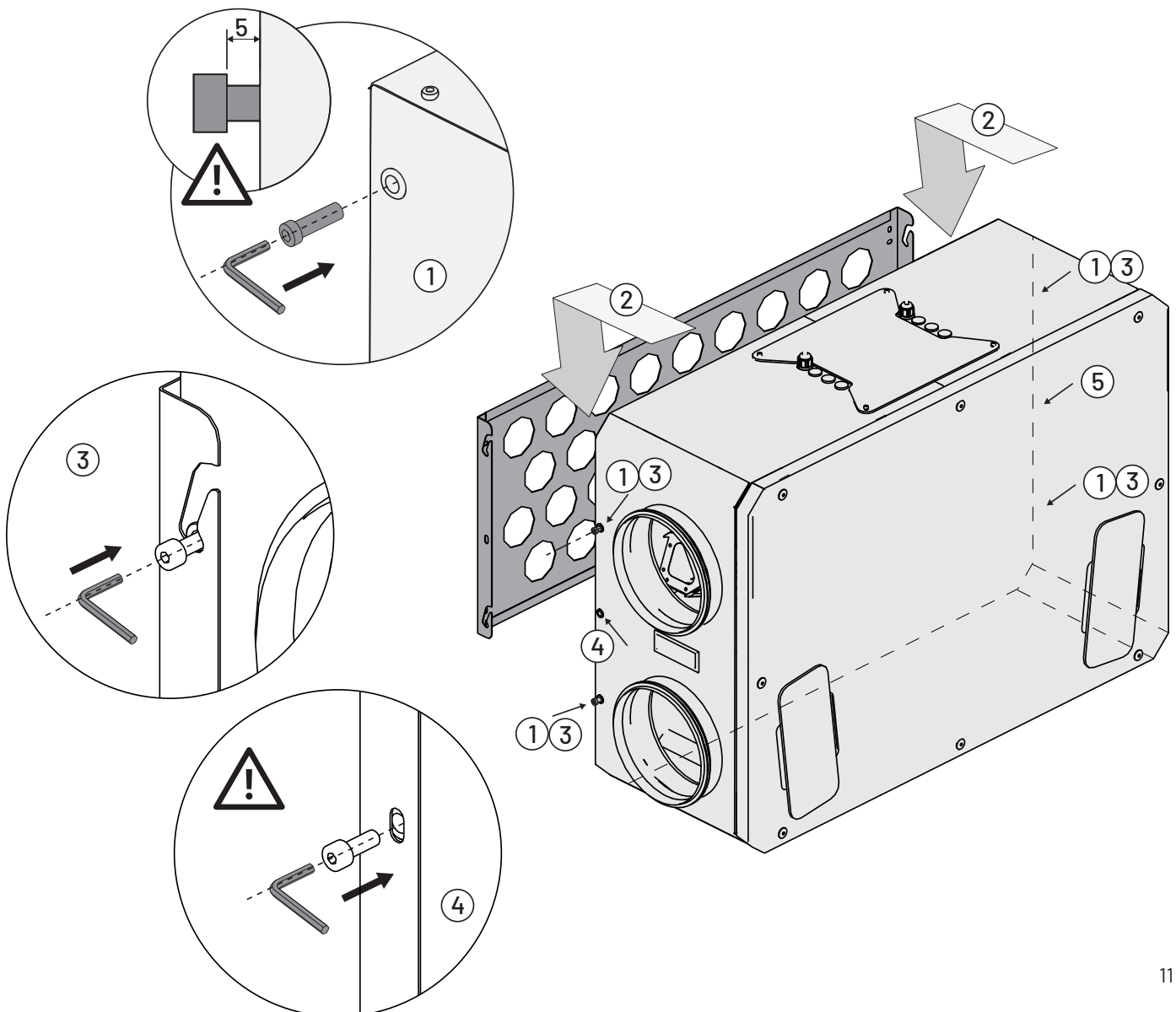
Refer to the filter box manual for details.

06 Assembly

06.01 Frame assembly

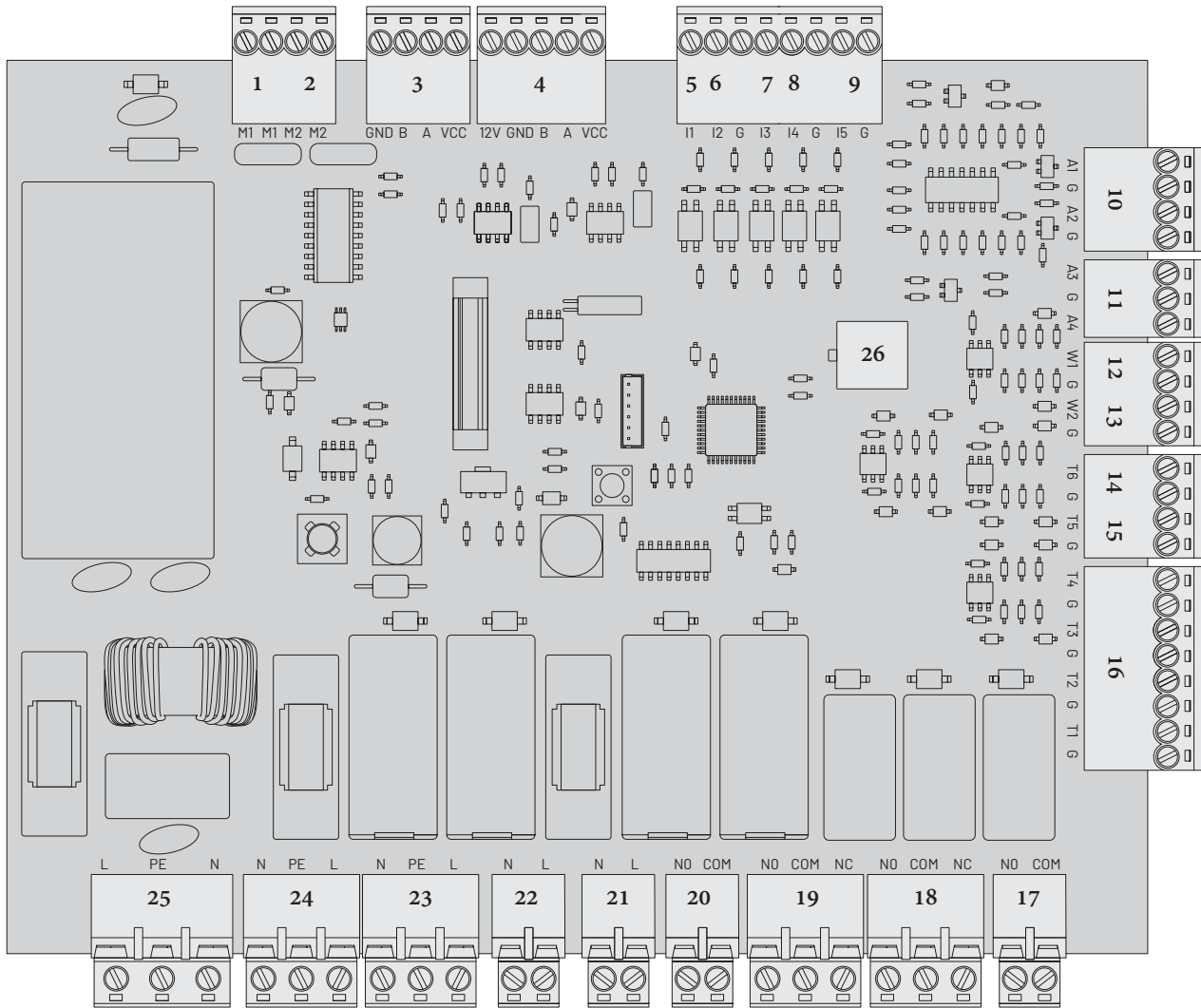


06.02 Assembly of recuperator on frame



07 Automation

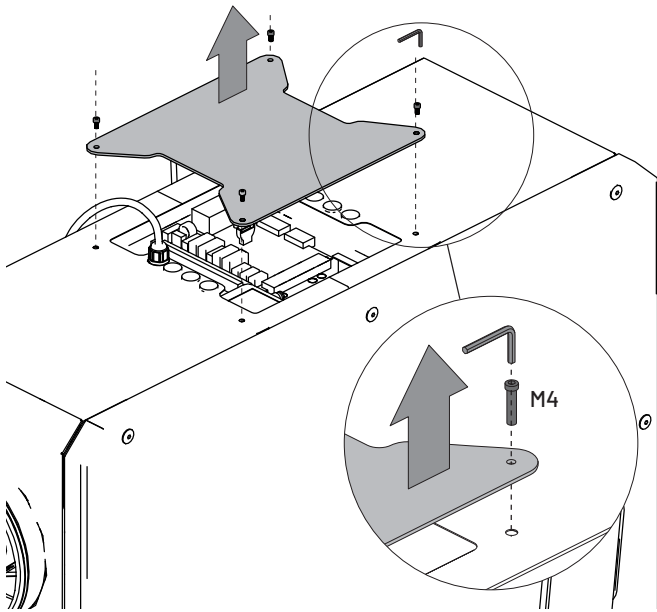
07.01 iZZi (model KR-04) control engineering diagrams



1. Bypass actuator
2. Damper GWC iZZi
3. iZZi touch panel
4. CO₂/hygro iZZi measuring module
5. Turbo bell button (Digital input, 100% efficiency)
6. Bell button fireplace mode (Digital input, supply 90%, exhaust 60% efficiency)
7. Hood switch (Digital input, 100% supply, extract 30% efficiency)
8. The fire alarm panel signal (Digital input, 0% efficiency)
9. The alarm panel signal (Digital input, 20% efficiency)
10. Supply fan control (A1)
Exhaust fan control (A2)
11. Analog control 0-10V two-way valve of the heater and cooler
12. Analog input 0-10V - external optimal control
13. Inactive connector
14. Duct outdoor temperature sensor (for ground-air heat exchanger system)
15. Duct sensor downstream of the heater/cooler
16. Temperature sensors:
T1 - on the air intake
T2 - on the exhaust vent
T3 - on the air supply
T4 - on the air exhaust
17. Cooler control (potential-free contact)
18. Control of cooler's solenoid valve (potential-free contact)
19. Control of heater's solenoid valve (potential-free contact)
20. Control of the electric reheater (potential-free contact)
21. 230V actuator of ground-air heat exchanger
22. Power supply of preheater
23. Power supply of exhaust fan
24. Power supply of supply fan
25. Power supply of the device
26. iZZi constant flow module slot

07.02 Control engineering revision

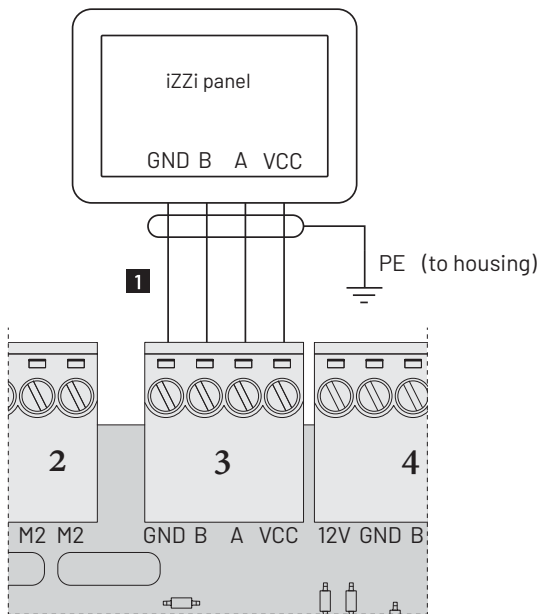
Automation of the recuperator is located in its upper part. Remove 4 screws and protective cover to get access to it:



07.03 Touch panel

The iZZi 302 recuperator is equipped with a dedicated touch panel. A shielded 4-wire cable (3 meters included) is used to connect the panel to the automation of the device. If the panel is installed at a longer distance, purchase a dedicated 15m iZZi signal cable or replace it with a 4x0.5 or 4x0.75 shielded cable (over 10 meters long). The shield has a significant impact on the elimination of interference to which the data transmission cable is exposed. It should be connected to the PE terminal of the air handling unit.

Installation of the touch panel - see item 05.04.
Description and features of the controller - see item 08.



1 shielded control cable LiYCY 4x0.5mm² (for connections longer than 10m LiYCY 4x0.75mm², in shield)

Fig. Connection diagram of the touch panel to the automation board.

07.04 Ground exchanger Heat

The iZZi controller can cooperate with a ground-air heat exchanger (GWC) by controlling the actuator of control damper (switching between the ground and wall intake vent) or by activation of the circulation pump in the glycol-based heat exchanger (GGWC). For correct operation, it is necessary to connect additional duct sensor installed on the duct of the intake vent (see the drawing below).

GWC activation and setting - see section 08.06.4

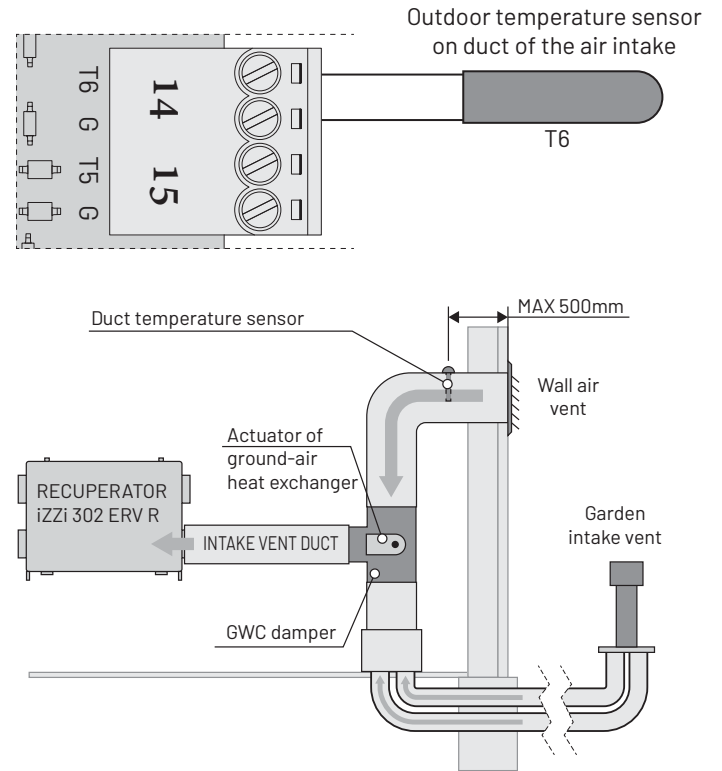
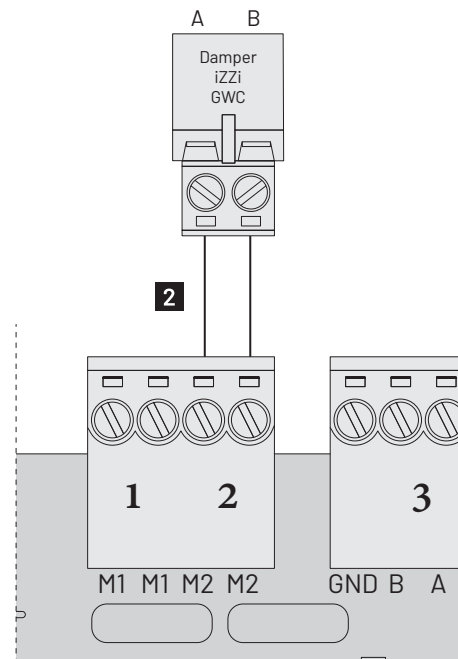
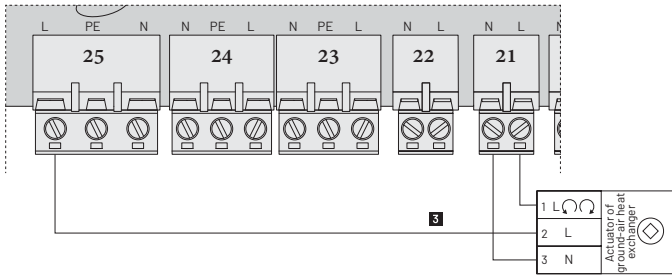


Fig. Connection diagram of the outdoor temperature sensor on the intake vent duct



2 Control cable LiYY 2x0.5mm²

Fig. Connection diagram for iZZi GWC damper

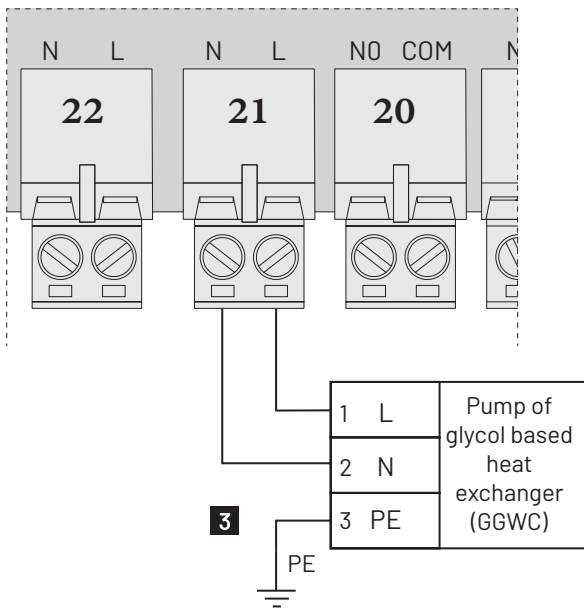


3 OMY current cable 3x0.5mm²

Specification of damper actuator:

- AC 230V
- close/open

Rys. Connection diagram for 230V actuator of control damper of the ground-air heat exchanger



3 OMY current cable 3x0.5mm²

Fig. Connection diagram of circulation pump of the ground-air heat exchanger

07.05 Duct reheater

07.05.1 Electric reheater

The iZZi controller supports control of electric duct reheater used to heat up the air supplied to the building. Automation allows controlling on/off of the electrical heater or a heater smoothly controlled by 0-10V signal. It is required to connect additional duct sensor, installed downstream of the heater (see drawing) to ensure correct operation.

Activation and setting of the heater - see item 08.06.1.

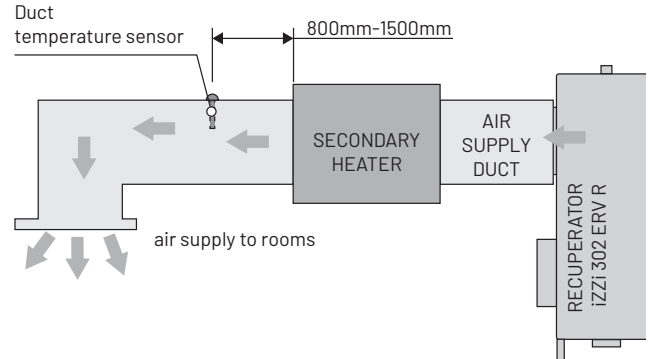
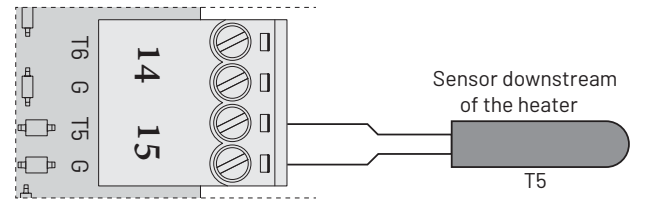
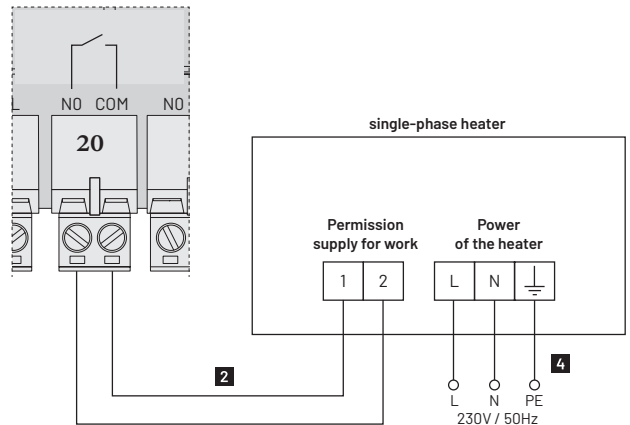


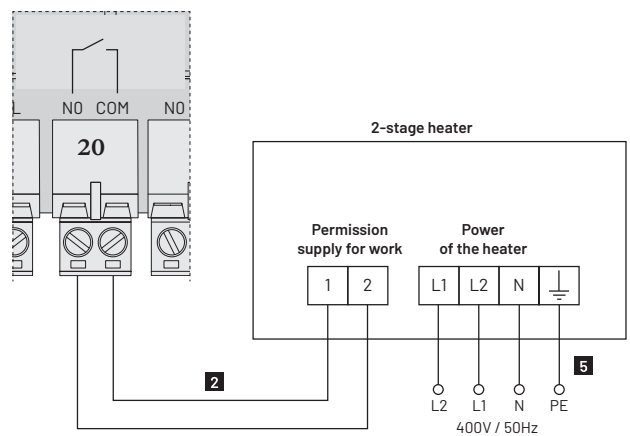
Fig. Connection diagram of the temperature sensor downstream of the electric reheater.



2 Control cable LiYY 2x0.5mm²

4 current wire 3x1.5mm²

Fig. Wiring diagram of the secondary electric heater 1-phase on/off power from 1.0 kW to 3.0 kW.



2 control cable LiYY 2x0.5mm²

5 current wire 4x2.5mm²

Fig. Connection diagram of the electric reheater 2-phase on/off with power from 3.0 kW to 6.0 kW

07.05.2 Water reheater

The iZZi controller supports control of the water reheater used to heat up the air supplied to the building. Automation allows controlling a 0-10V two-way valve or electrothermal linear valve. It is required to connect additional duct sensor, installed downstream of the heater (see drawing) to ensure correct operation. Activation and setting of the heater's operation - see item 08.06.1.

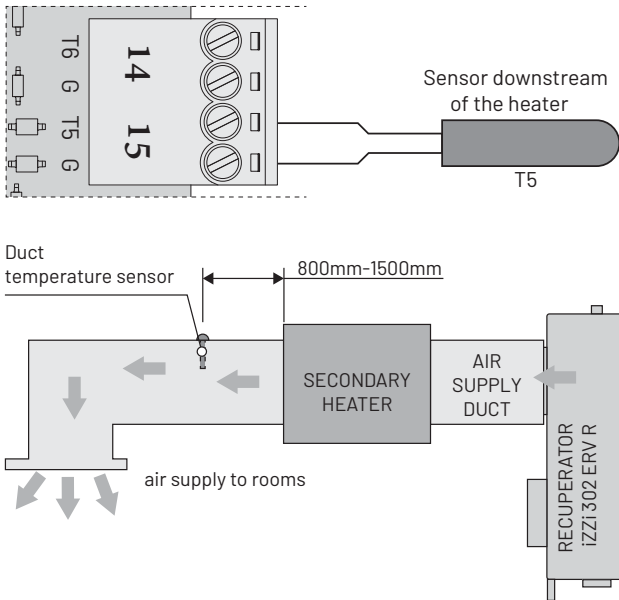
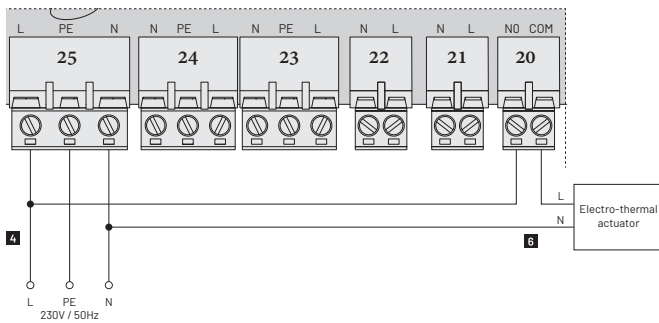
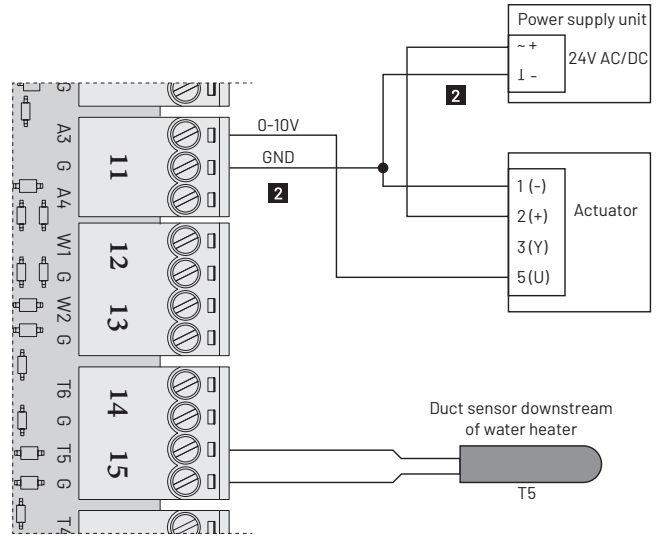


Fig. Connection diagram of the temperature sensor downstream of the electric reheater.



- 4** control cable LiYY 2x0.5mm²
- 6** current cable 4x2.5mm²

Fig. Connection diagram of the water heater controlled with an electrothermal linear actuator.



- 2** control cable LiYY 2x0.5mm²

Fig. Connection diagram of a 0-10V water heater controlled with a valve.

07.06 Duct cooler

07.06.1 Water duct cooler

The iZZi controller supports control of water cooler intended for cooling down of air supplied to the building. Automation allows you to control a 0-10V two-way valve. It is required to connect additional duct sensor, installed downstream of the cooler (see drawing) to ensure correct operation.

Activation and setting of cooler's operation - see item 08.06.3.

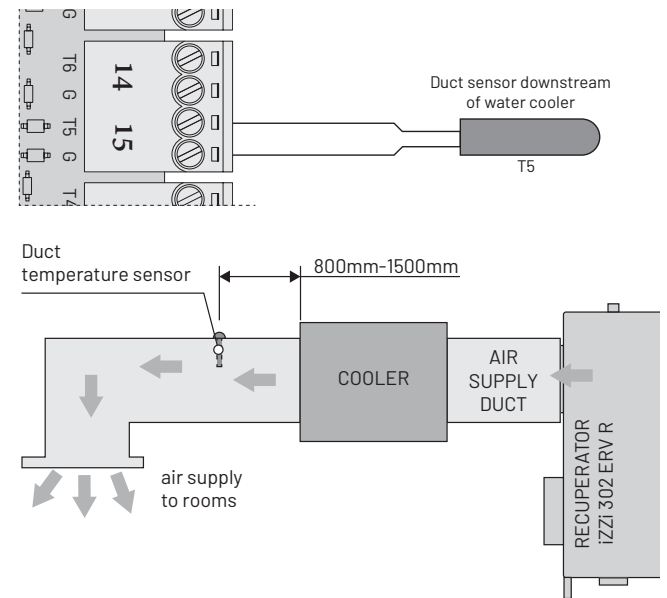
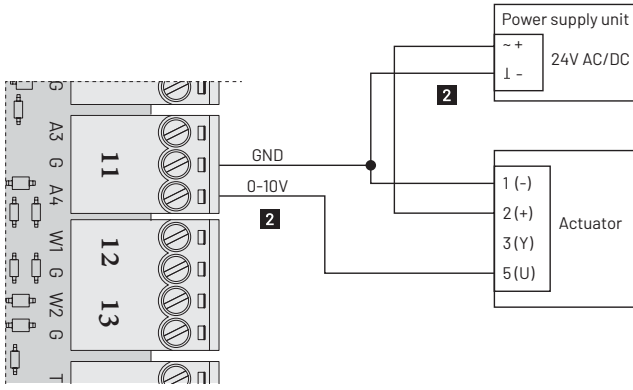


Fig. Connection diagram of the temperature sensor downstream of the water cooler.



2 control cable LiYY 2x0.5mm²

Fig. Wiring diagram of a water cooler controlled by a 0-10V valve.

07.07 Simultaneous connection of cooler and reheater

The iZZi controller allows connecting the heater and secondary cooler at the same time. The connection is made according to the diagrams described in items 07.07. In such a case it is necessary to install only one additional temperature sensor located on air supply duct downstream of the heater and duct cooler.

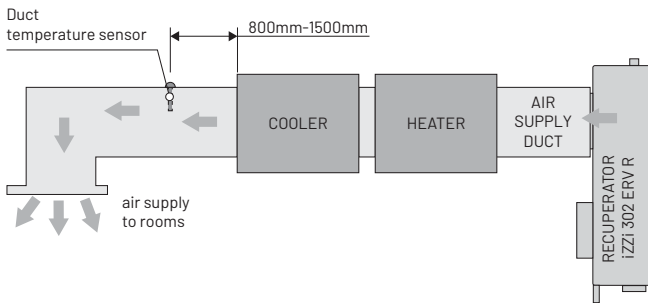
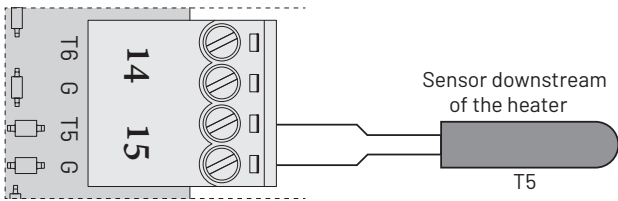


Fig. Connection diagram of the temperature sensor downstream of the cooler and heater.

07.08 Preheater

The iZZi controller supports the operation of a duct electric preheater intended for defrosting of the heat exchanger during the winter when the outdoor temperatures are low. The heater switches on automatically when the freeze protection system is in operation. Automation allows controlling and direct supply of the heater of power up to 500W or control of heater's contactor of power over 500W.

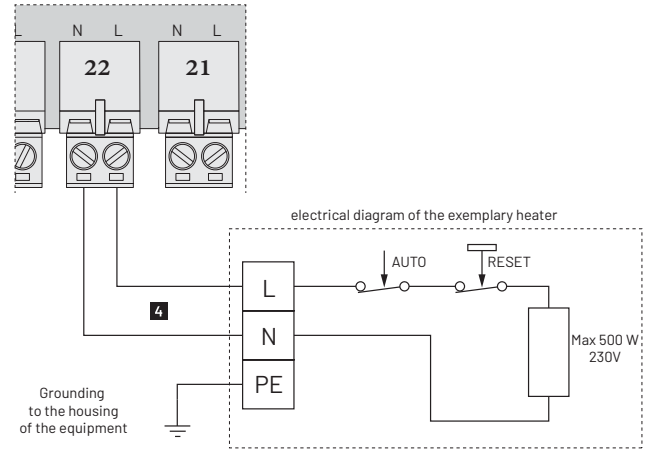


Fig. Connection diagram of the preheater of power up to 500 W.

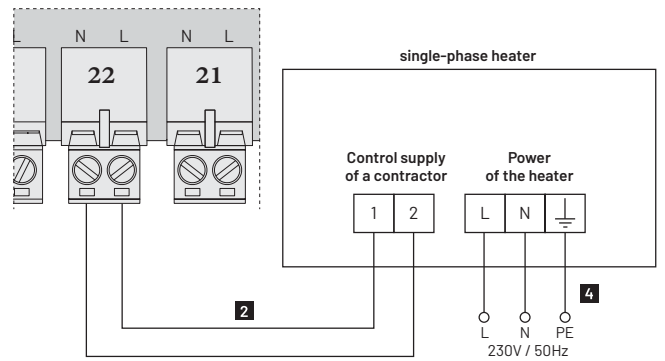
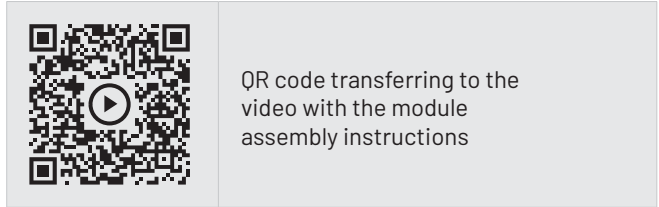


Fig. Connection diagram of the electrical reheater with power over 500W.

07.09 IZZi constant flow module (recommended)

The iZZi recuperator may have connected an optional constant flow module, which is responsible for the automatic balancing of the ventilation system during recuperator operation, adapting the operation of the fans to the current resistance of the installation on the supply and exhaust side. Once connected and activated in the settings, it also allows to view the current operating status of the recuperator in the "m³/h" unit.

Activation and settings of the module - see item 08.06.6.
Installation instructions included with the module.

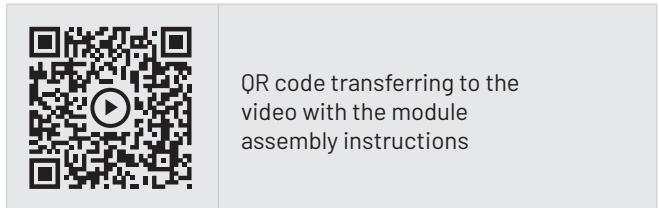


Note! In the absence of a module, the ventilation system must be manually balanced by measuring and correcting the capacity of the supply and exhaust fan (see section 08.04.6.4).

07.10 CO2/hygro iZZi module

The iZZi recuperator may have connected an optional CO2/hygro module to measure the concentration of carbon dioxide and humidity in the air removed from the house and the operation of the device in automatic mode (see section 08.04.4).

Activation and settings of the module - see item 08.06.2.
Installation instructions included with the module.



07.11 Ventilation bell button (turbo)

The iZZi controller has an option of connecting an external ventilation bell button to the mirrored digital input in the recuperator automation. Cooperation with the bell button is performed by passing an impulse (short-circuiting of the entrance to the ground) to the measuring module located inside the air handling unit.

Activation and description of the operation of the turbo ventilation bell button - see item 08.04.1.

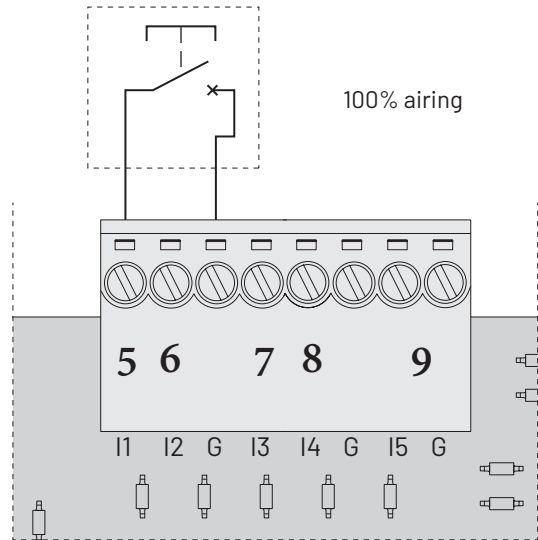


Fig. Connection diagram of the bell (pulse) button.

07.12 The alarm panel signal

The iZZi controller can cooperate with the fire alarm control panel by connecting it to a normally open digital input in the recuperator's automation system. Cooperation with a fire alarm panel is based on an impulse (shorting of input to the ground) to the measuring module located outside the air handling unit. Recuperator stops operation when the signal is sent.

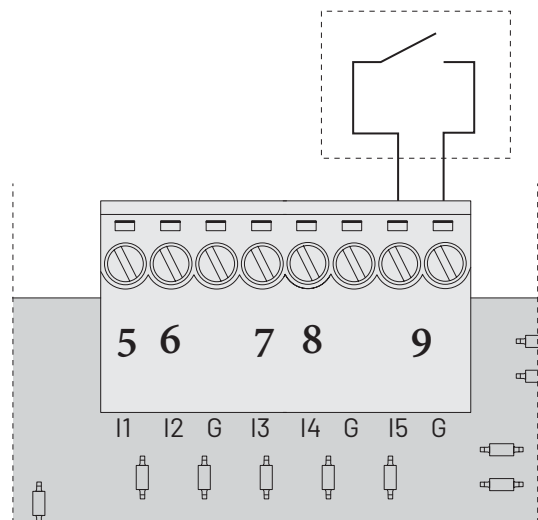


Fig. Connection diagram for the alarm panel.

07.13 Switch at the hood

The iZZi controller supports cooperation with the kitchen hood by connecting the switch to the digital input in the recuperator automation. Cooperation with a switch on the hood is based on an impulse (short-circuit of input to the ground) to the measuring module located outside the air handling unit. When the signal is supplied the recuperator starts operation in the following mode: air supply 100%, air exhaust 30% of capacity.

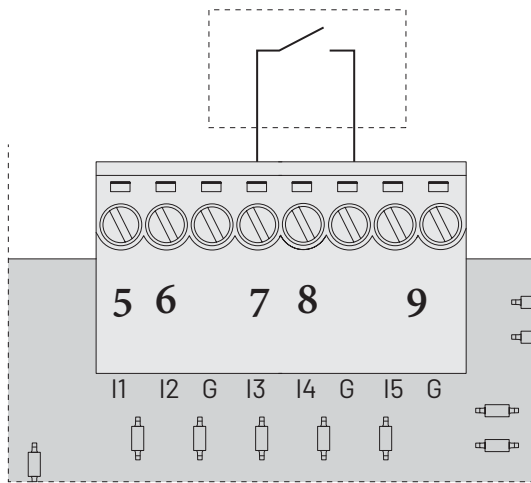


Fig. Connection diagram of the hood switch.

07.14 The fire alarm panel signal

The iZZi controller has the possibility to work with the control panel by connecting to the mirrored digital input in the recuperator automation. Cooperation with the panel consists in the administration of an impulse (short-circuit of the entrance to the mass) to the measuring module located inside the air handling unit. The recuperator stops the fans from working when the signal is given.

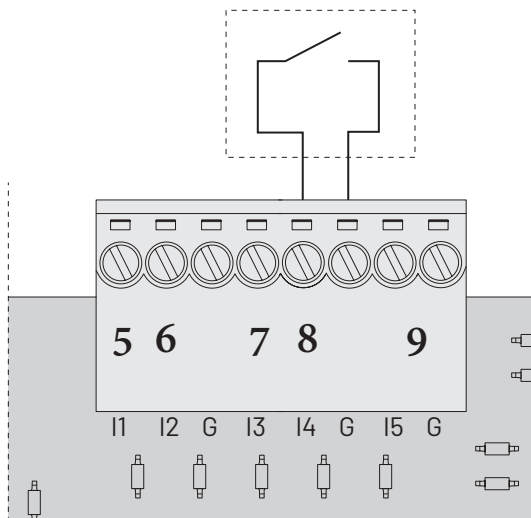


Fig. Connection diagram of the control panel

07.15 Fireplace mode bell button

The iZZi controller has an option of connecting an external bell button of the fireplace function to the mirrored digital input in the recuperator automation. Cooperation with the bell button is performed by passing an impulse (short-circuiting of the entrance to the ground) to the measuring module located inside the air handling unit.

Activation and description of the operation of the bell button - see section 08.04.3.

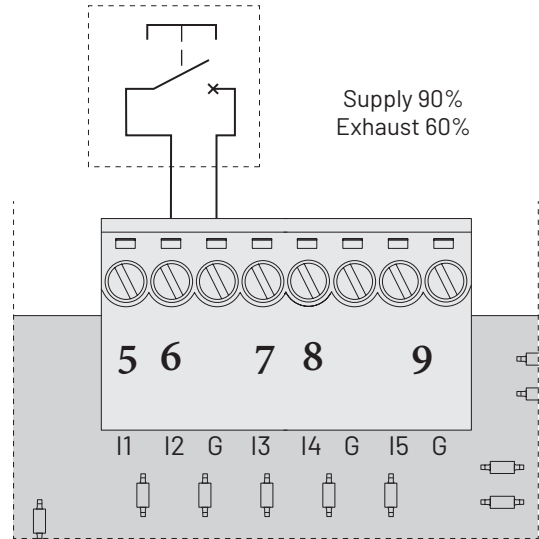


Fig. Diagram of connection of the bell (pulse) button.

07.16 External signal control 0-10V

The IZZI302 recuperator has an option of adjusting its productivity using an external voltage signal of 0-10V DC.

If the voltage given on input 12 (W1, G) is less than 1V, then the device operates in accordance with the mode set on the control panel. Increasing the voltage above 1V allows to set the airflow values, where the control voltage is interpreted as a percentage of the maximum recuperator performance value. 10V means 100% maximum performance, 3V means 30% etc. This type of control has a higher priority than the IZZI302 panel functions as long as the voltage is between 1 and 10V DC. The function is inactive below 1V.

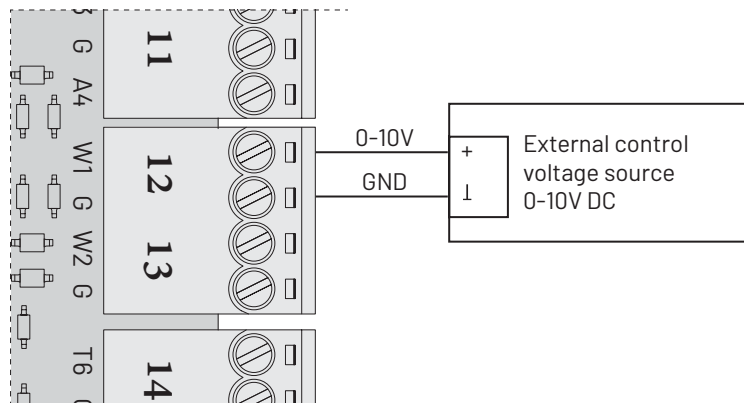
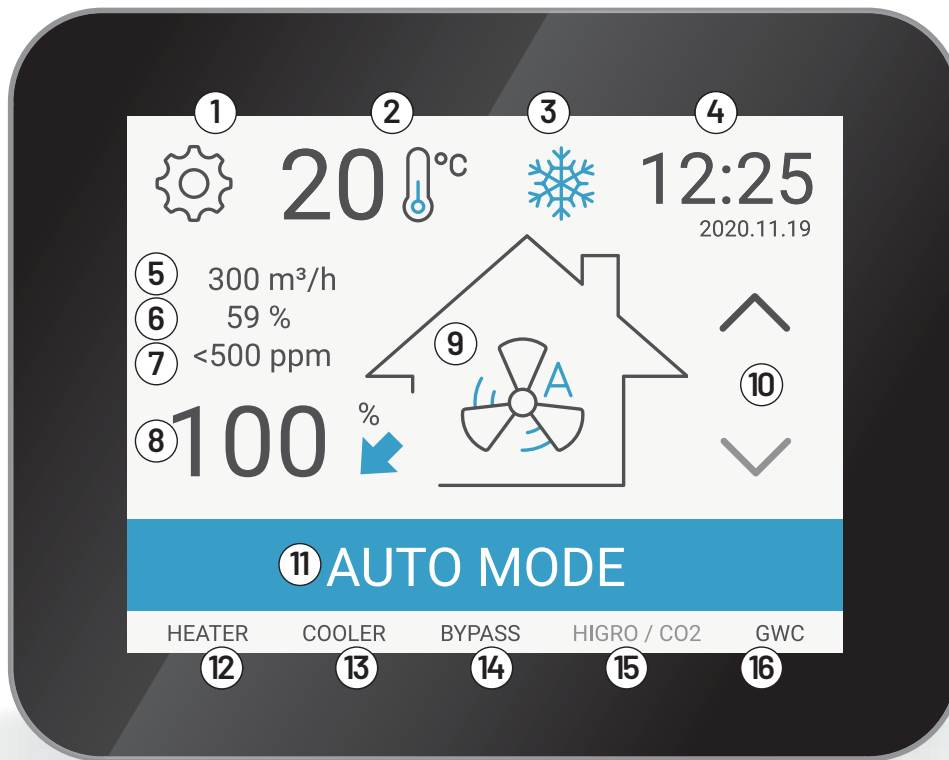


Fig. Control diagram of the capacity of the air handling unit by means of an external signal 0-10V



1. Go to the OPTIONS screen
2. Displays the exhaust air temperature and the transition button to the VENTILATION SYSTEM TEMPERATURE CONTROL screen
3. Message or alert field
4. Displays the current date and time
5. Current work efficiency (fixed flow module only)
6. Current humidity in the building (with CO2/hygromodule only)
7. Current carbon dioxide level in the building (with CO2/hygro module only)
8. Exhaust fan performance (in FIREPLACE mode also supply fan performance)
9. Changing operating mode - moves to the screen: OPERATING MODES AND PERFORMANCE SETTINGS and displays the current operating mode
10. Changing manual operating modes: GEAR 1 • GEAR 2 • GEAR 3
11. Displays the current operating mode
12. Duct heater - device status
13. Duct cooler - device status
14. Bypass - device status
15. CO2/hygro module - device status
16. GWC (Ground-air heat exchanger) - device status

Fig. Control panel with display home screen

08.01 Basic features of the controller

- Control of operation of the air handling unit in automatic mode (operation acc. to weekly mode) or manual mode (3 levels of performance)
- Automatic performance control based on the quality of air in the building (with CO2/hygromodule only)
- Automatic balancing of air streams (Main screen and operating mode presentation with Constant Flow Module only)
- Option to correct air supply capacity in relation to exhaust.
- Master modes that are "Turbo ventilation", "air purification" and "out of home" mode • Digital inputs for connection of Turbo ventilation button, hood and fire alarm control panel.
- Control of actuator of the damper of the ground-air heat exchanger
- Control of external duct heater operation (water and electricity)
- Control of the operation of the duct cooler
- Real-time clock
- Settings memory after a power failure
- Return to factory settings option
- Time-dependent alarm informing about the replacement of the filters (information every 90 days)
- Adjustment of the intensity of the backlight of the screen-saver
- Adjustment of the volume of key sounds
- Dedicated housing made of ABS with a box equipped with magnetic holder
- Menu available in Polish, English, German, Dutch, Russian, Hungarian, Slovak and French

08.02 Main screen and operating mode presentation

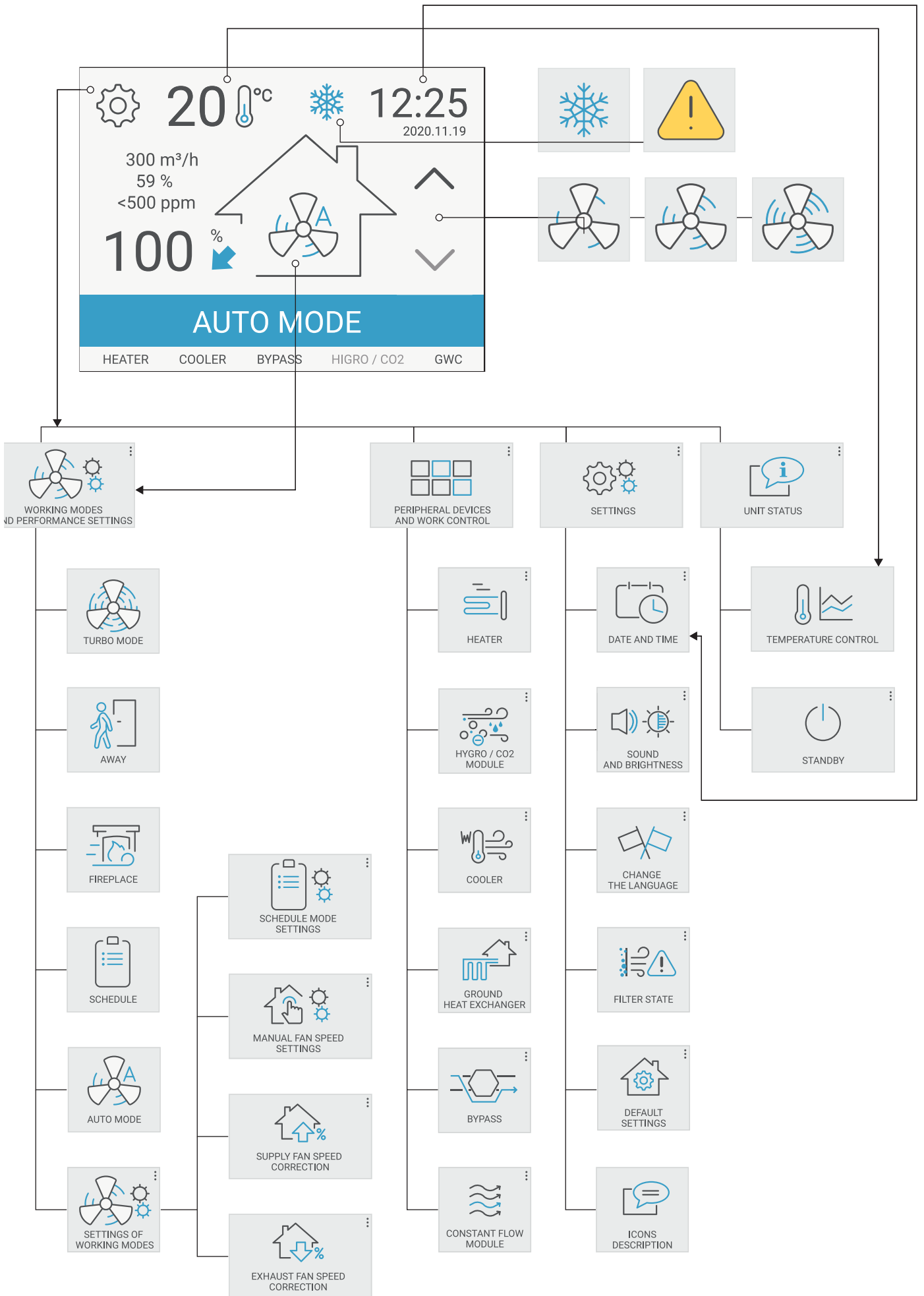
Basic information on the operation of the ventilation system is displayed on the main screen (see the figure).

Among other things, it presents: Current work efficiency

fans (8), exhaust air temperature (2) and currently selected recuperator operation mode (11). Icon (9) allows to quickly move to the "Operating modes and screen performance settings" (see item 08.04), and icon (2) moves to the "Ventilation system temperature control" screen (see item 08.07.1). The home screen also provides status information of connected peripherals (12) - (16). After connecting the device, we will see its icon on the display, and activating a specific driver function changes the icon color at the bottom of the screen (see item 08.06).






Fields (5), (6) and (7) display additional information when optional modules are connected. With the buttons (10) we can smoothly choose between one of the three programmed gears of the manual mode. In order to move to the remaining functions and settings of the controller, select the OPTIONS icon (1). Their description can be found further in the manual - see item 08.03.

Structure of the touch panel functions



Navigation

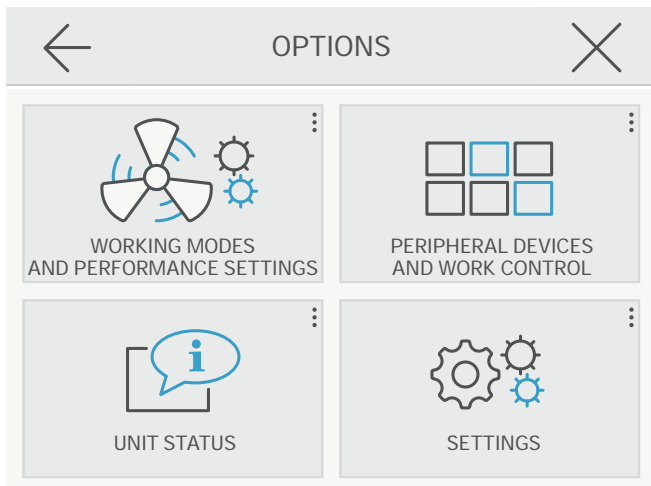
Select the appropriate programme icon or one of the following software icons to navigate:

	return to home screen
	return to previous screen
	arrows are used to change the value or move the active cursor/beam.
	
	approves field selection and changes made



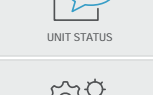
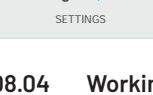
08.03 OPTIONS screen



Selecting the button ① moves to the OPTIONS screen.



The displayed set of icons allows you to perform the following operations:

	switch to the screen OPERATING MODES AND SETTINGS (see section 08.04)
	switch to the PERIPHERALS screen LABOUR CONTROL (see section 08.06)
	switch to the screen STATUS OF THE UNIT (see section 08.07)
	switch to the settings screen (see section 08.05)

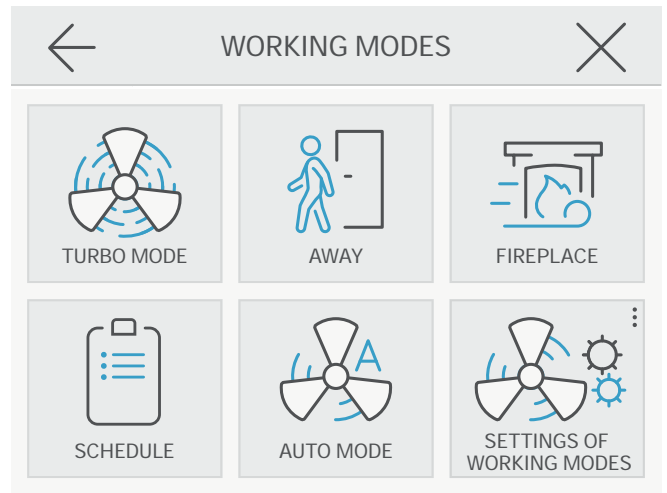
08.04 Working modes and performance settings



Selecting this button moves to the operating mode selection screen. The user can activate one of the available operating modes via clicking on the appropriate icon.



It is also possible to switch to the operating modes screen directly from the home screen by pressing the current operating mode icon in the center of the screen.



08.04.1 TURBO MODE



Activating the TURBO MODE key changes the air handling unit's efficiency to the maximum value. This program is used for exchanging large amounts of air in a short time. "TURBO MODE" is presented on the main screen then. This is a time mode that lasts 10 minutes. After that time, the controller returns to the previous settings.

08.04.2 OUT OF HOME mode



Activating the away key causes the setting the minimum capacity value of the air handling unit. On the home screen, the message "OUT OF HOME" is displayed. The program works best when we leave the apartment empty for a long time.

08.04.3 FIREPLACE mode



Activation of the FIREPLACE key increases the speed of the supply fan - it produces overpressure at home in order to facilitate the fire-up. On the home screen, information about the "FIREPLACE" is displayed. This is a time mode that lasts 15 minutes. After this time, the controller returns to the previous settings.

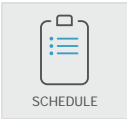
08.04.4 AUTOMATIC mode



In AUTOMATIC mode, the recuperator's performance is determined automatically based on the current air quality in the house. The higher the CO₂ concentration (e.g. due to more people in the building), the higher the air exchange. The recuperator also increases its performance in the event of rapid increase of humidity in the house (e.g. when cooking or taking a bath).

Note! The mode is ONLY available when the optional CO₂/hygro module is connected and activated.

08.04.5 SCHEDULE mode



When operating in Schedule mode, the controller uses the weekly program settings, and the performance of the air handling unit changes according to the user's time schedule. On the home screen, the following information

is displayed:

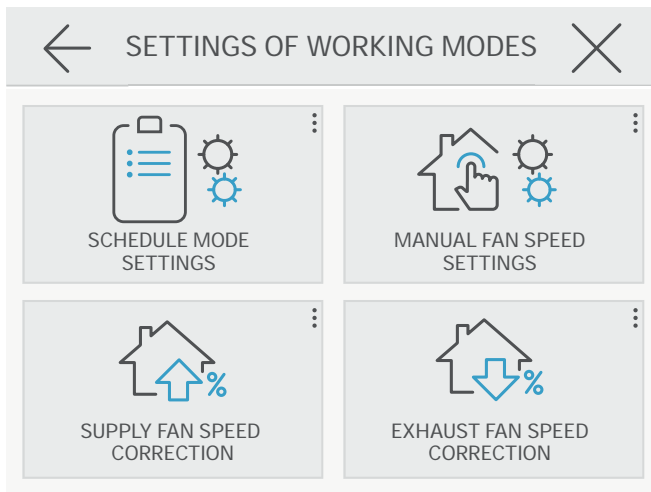
"SCHEDULE MODE". Schedule mode programming is described in section 08.04.6.1.

Note! Make sure that you have set up the date and time correctly before selecting SCHEDULE mode (see section 08.05.1)

08.04.6 OPERATING MODE SETTINGS



Selecting this button switches to the manual gear selection window, its programming and correcting the performance of the supply and exhaust fan.

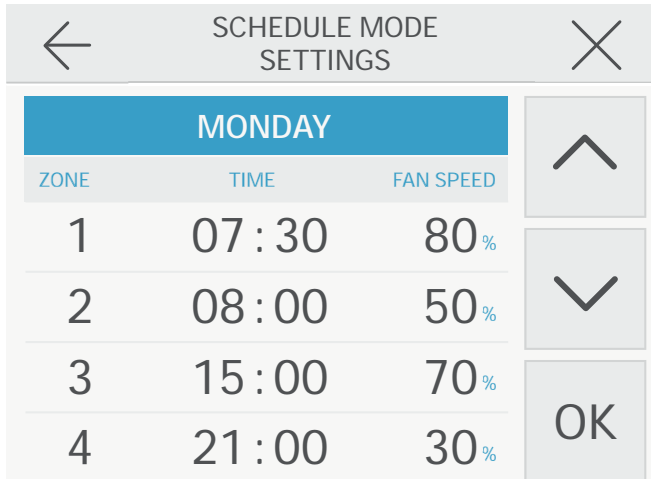


08.04.6.1 SCHEDULE MODE SETTINGS

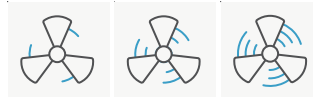


In the schedule mode settings, we set a work schedule for each day of the week. Every day we have 4 time zones at our disposal, which we program the beginning (ZONE START) and rotational

speed (CAPACITY). To change the section we use the arrows and . For ease of navigation, an additional white beam is displayed below the active section. To select and edit the selected section click **OK**. We change the values with arrows and approve the change by clicking again **OK**. The changes you make work immediately in schedule mode.



08.04.6.2 Manual mode speeds

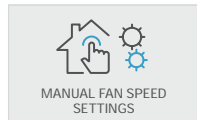


Manual mode means working with constant performance on the device's chosen gear. The keys are assigned three performance levels of the

air handling unit. When operating in manual mode, the running number of the device is presented. This information can be seen on the driver's home screen.

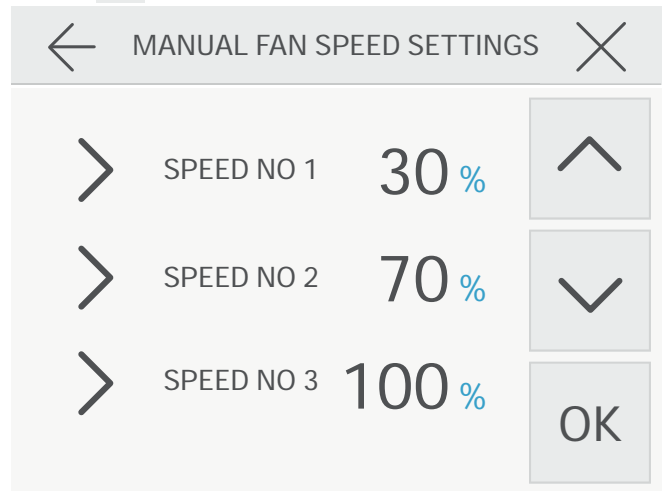
Manual mode runs can be selected on the home screen by moving the mode change arrow .

08.04.6.3 Programming manual mode gears



In order to program performance values for individual gears in manual mode, on the screen "MANUAL MODE settings" move the cursor using arrows to a desirable gear and approve by

clicking **OK**.



Next, set the desired values with arrows and confirm again with the **OK** button. Repeat the action for the remaining gears and exit to the main window with the icon or the window above with the icon the set levels are assigned to the manual gear buttons.

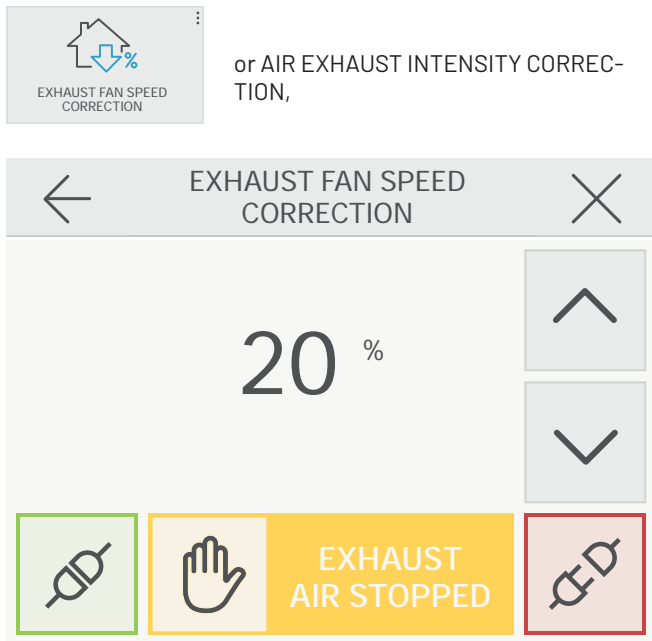
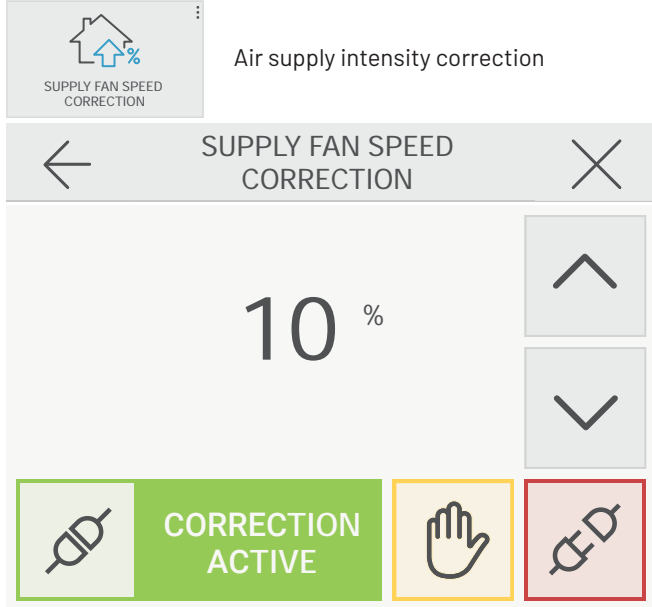
Values are expressed as percentages and refer to the maximum capacity of the air handling unit (value 100%).




08.04.6.4 Software-based performance correction

Depending on the current needs and resistances of the ventilation system the user can make independent correction of flow rate for the air supply and exhaust fan.

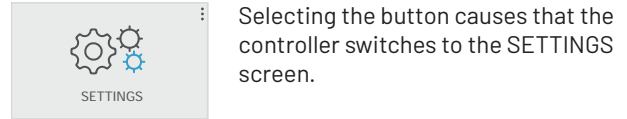
NOTE! To obtain the same values on air supply and air exhaust it is required to carry out measurements of the performance of the whole system after connection of the recuperator to the ventilation system and then carry out proper adjustments of air streams. This is intended to optimize the performance of heat recovery of the equipment

Using the buttons:

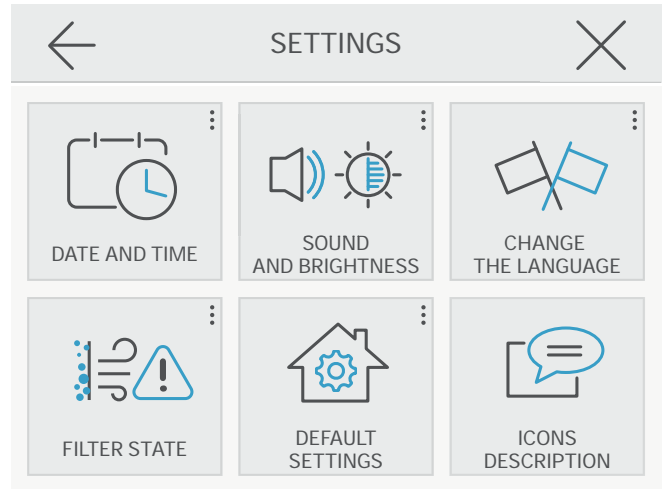


you can reduce the ventilation intensity for a given channel from the controller.
 Setting the value e.g. 10% and activating the correction with the green button  reduces the supply or extraction efficiency by 10% compared to the value programmed in manual or automatic mode. Additional possibility is provided by a middle button  that allows you to stop the selected fan and work only in the supply or extract mode, without heat recovery. The red button  allows you to disable correction.

08.05 SETTINGS screen

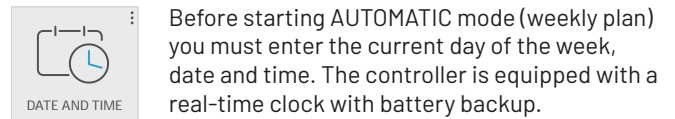


Selecting the button causes that the controller switches to the SETTINGS screen.

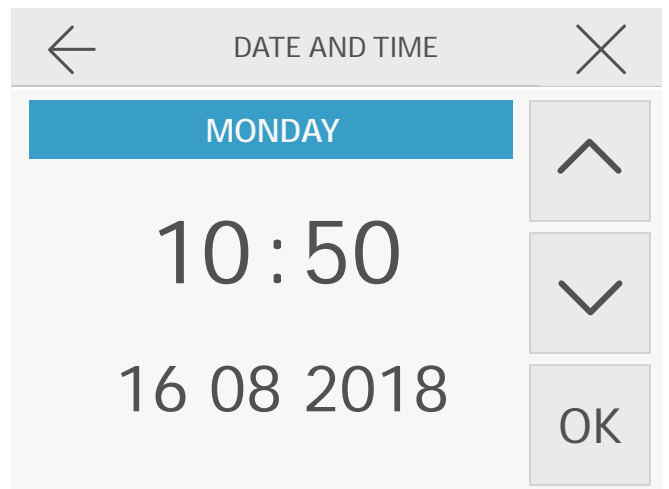







The icon set displayed allows you to view and adjust the following functions:

08.05.1 Time and Date Settings

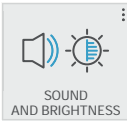


Before starting AUTOMATIC mode (weekly plan) you must enter the current day of the week, date and time. The controller is equipped with a real-time clock with battery backup.

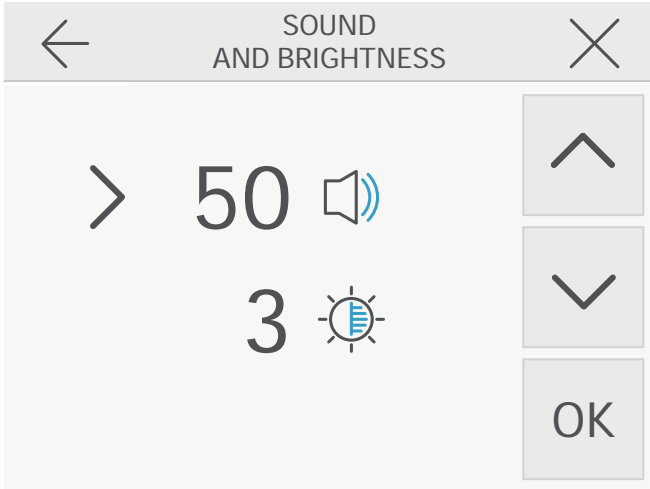


The window is divided into 3 sections: day of the week, time and date. To change the section we use the arrows  and . For ease of navigation, an additional white beam is displayed below the active section. First, select the day of the week. To select and edit the selected section click **OK**. We change the values with arrows   and approve change by clicking **OK** again. All settings are stored in the controller's memory and are visible on the main screen .

08.05.2 Sound level and brightness settings



The next screen allows setting the sound level of the function keys and the LCD backlight level. Next, set the required values using the arrows and and confirm once again with button **OK**.

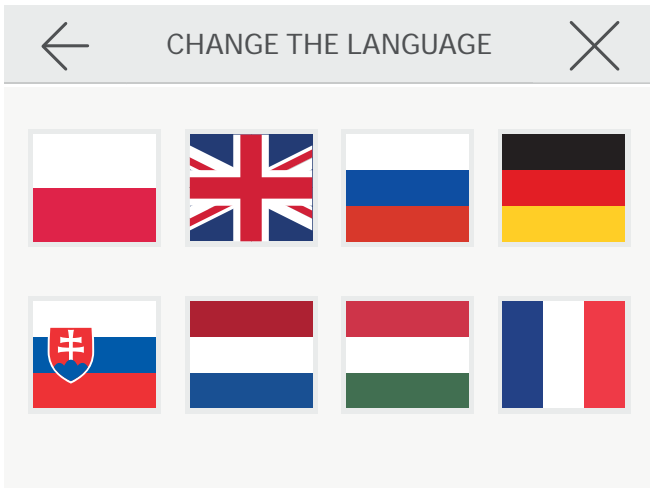


Next, set the required values using the arrows and , confirm once again with the **OK** button. Reducing the brightness level of the screensaver allows reducing consumption of power by the controller. The backlight is deactivated after ten seconds after operation (function control) or setting by the operator.

08.05.3 Language settings



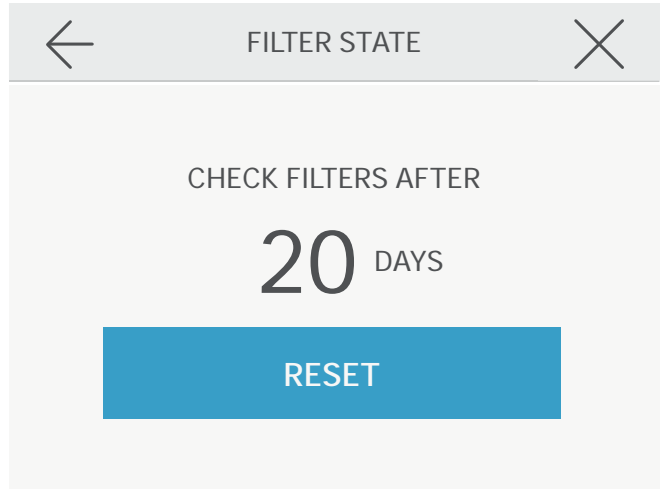
The controller allows for operation in eight languages: Polish, English, Russian, German, Slovak, Dutch, Hungarian and French. Language is selected by clicking on one of the flags displayed on the panel.



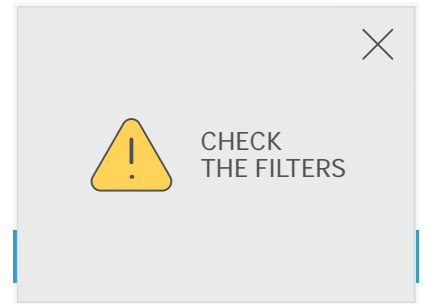
08.05.4 Inspection of filters condition



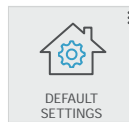
The controller is equipped with a timer, counting down the run time, to ensure timely inspection of the condition of the filters located inside the air handling unit.



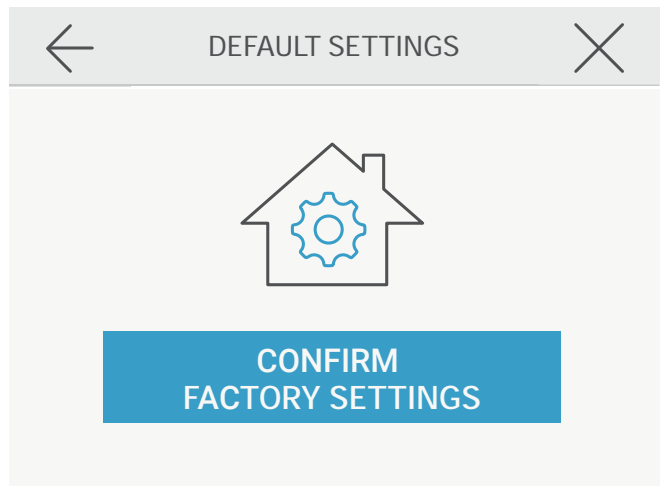
Pressing the **RESET** button on the filter inspection screen results in storing 90 days in the memory. Each subsequent day of operation reduces the counter value by 1 day. When the indicated value reaches 0, the screen will show the following message on the main screen message "Check the filters". Select the **RESET** button once again after the maintenance operations. The countdown will be started once again and the next alarm will be displayed after three months.



08.05.5 Factory settings



Selecting **FACTORY SETTINGS** erases the existing settings and in memory of the factory parameters.



08.05.6 Icon descriptions

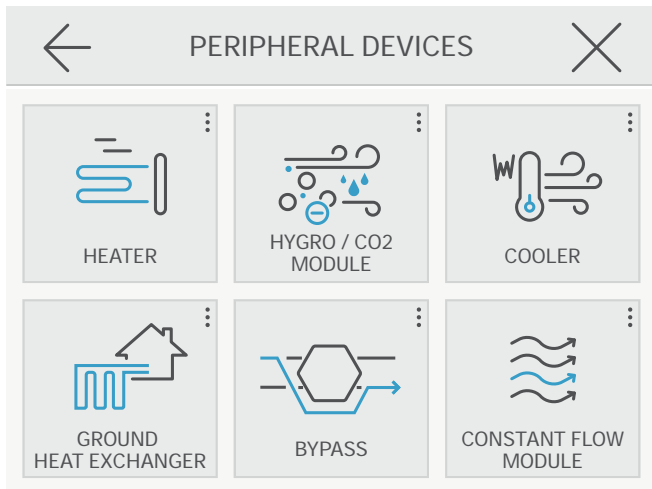


The descriptions under the icons make it easier to navigate for the less advanced users. The controller allows the user to change a display mode (with and without descriptions). The change occurs after clicking on the ICONS DESCRIPTION icon.

08.06 Peripherals and work control

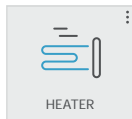




This button is used to switch the controller to the screen with settings for peripheral devices of the recuperator iZZi 302.

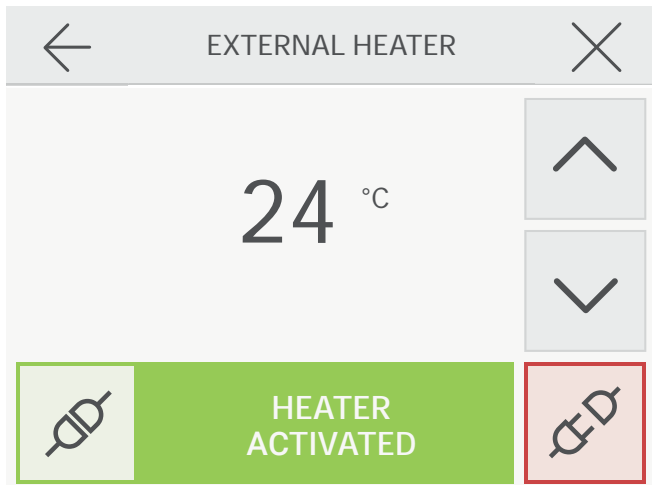


The displayed set of icons allows you to control the operation of the following devices:

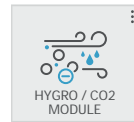
08.06.1 Control of the operation of the duct heater




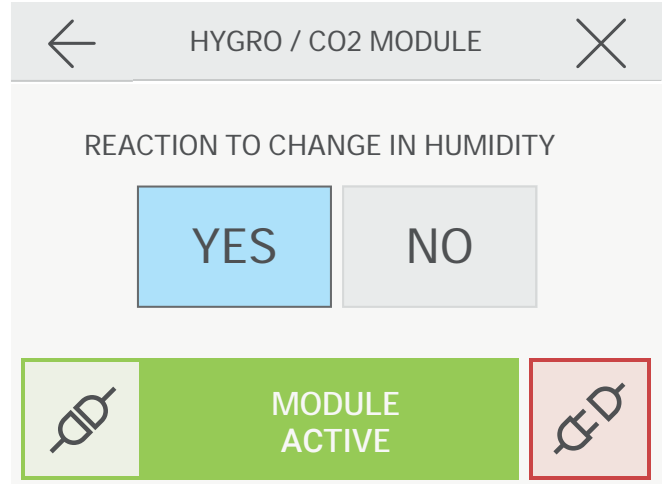
The iZZi controller supports control of the operation of the external duct heater. The heater connection is described in item 08.06.1. To control its operation set the required value of temperature at home and then activate the operating mode with the green button . The heater will be automatically activated when the home temperature is lower than the one set in the DUCT HEATER window. The red button  allows switching on the heater and locking the operation mode when the air reheating is not necessary.



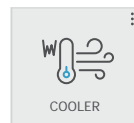
08.06.2 HYGRO / CO2 module support





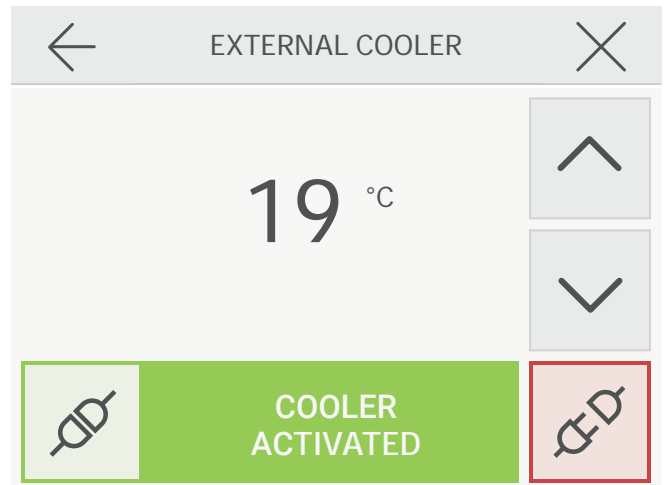
After the module has been properly installed (see the installation instructions included with the module), activate it with the green button . This activates the automatic mode (see section 08.04.4) and displays information about current CO2 and humidity levels inside the house on the control panel screen. The "humidity response" setting field refers to the automatic mode, for which we can determine whether a rapid increase in humidity in the house (e.g. during cooking or taking a bath) is to affect the increase in ventilation efficiency.



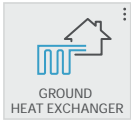
08.06.3 Control of the operation of the duct cooler




The iZZi controller supports control of the external duct cooler (water or freon). The connection of the cooler is described in item 07.06. To control its operation set the required value of temperature at home and then activate operating mode using a green button . The cooler will be automatically switched on when the temperature at home is higher than the value set in DUCT COOLER window. The red button  allows you to switch off the cooler and lock operating mode during the period when cooling of supplied air is not necessary.

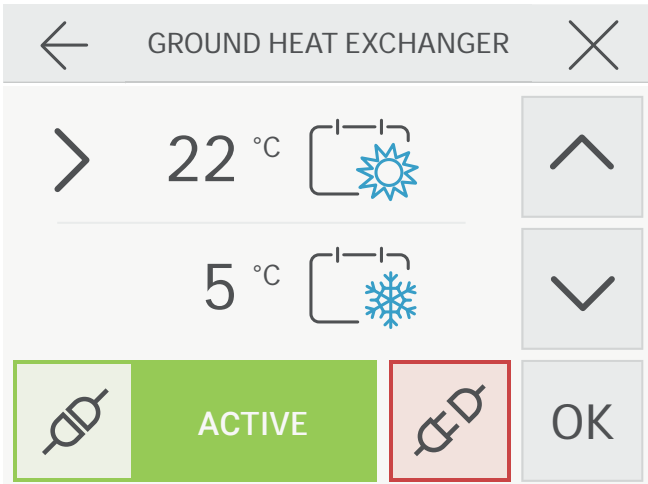


08.06.4 Controlling the operation of the ground heat exchanger (GWC)



The iZZi controller has the option of controlling a ground heat exchanger (air or glycol). Connection diagrams are described in point 07.04.

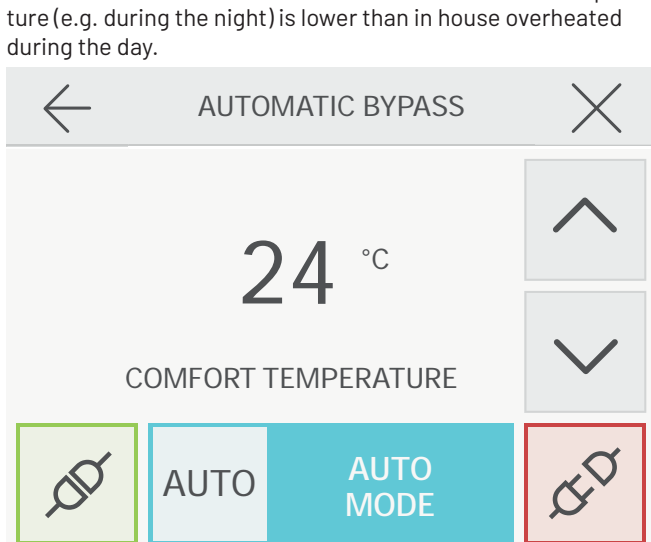
The GHE configuration screen allows you to set temperature thresholds for the summer and winter seasons. After activating the ground exchanger with the green button , it switches to the automatic operation mode. The GWC is turned on when the outside temperature is higher than the summer setting or lower than the winter setting. When the outside temperature is within the range defined by both settings, the exchanger is turned off (spring and autumn periods).






08.06.5 Control of bypass operation



The recuperator is equipped with automatic bypass (heat exchanger bypass) allowing supplying the air to the rooms directly from outside (without heat recovery). This function is useful in the summer when outside temperature (e.g. during the night) is lower than in house overheated during the day.

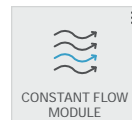



Bypass has 3 modes of operation:

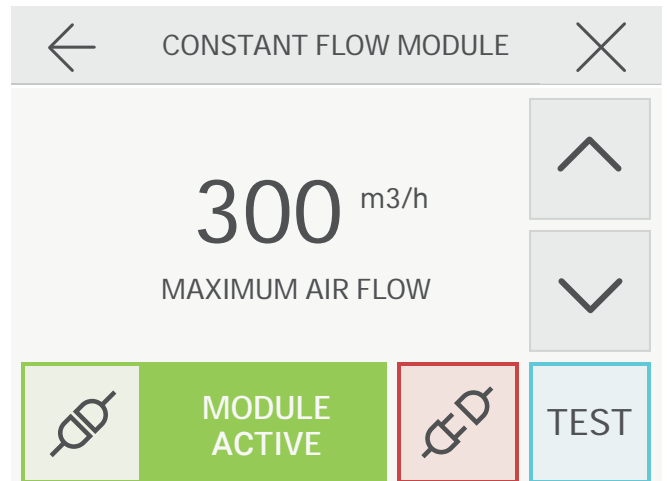
	ALWAYS OPEN (activation with green button) - the unit works continuously without heat recovery.
	AUTOMATIC (activation with orange button) - when the temperature at home is higher than COMFORT TEMPERATURE set, and the outdoor temperature is lower, then the bypass is activated automatically and cool air is supplied directly to the rooms.
	ALWAYS CLOSED (activation with red button) - the bypass function is inactive.

Note! When the outside temperature is below 10°C, the bypass in automatic operation mode is always closed for the safety of the unit and the ventilation system.

08.06.6 Support for fixed flow module




When the optional constant flow module is installed in the control panel, it is activated from the settings constant flow module by clicking the green Activate module button .



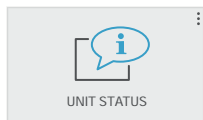
To perform the maximum airflow test, press the TEST button and wait 60 seconds for the control unit to check the maximum air flow achieved. Then read the result and return to the settings window by clicking X in the corner of the screen.

If necessary, set the arrows   in the "maximum airflow" field a different value than the measured.

Red button  allows to turn off the module.

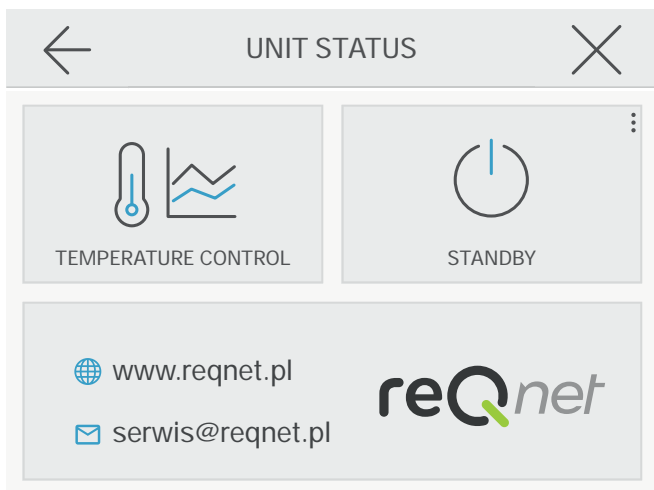
Note! Saving a higher maximum expense than the one achieved in the TEST does not increase the maximum capacity of the device.

08.07 Unit status

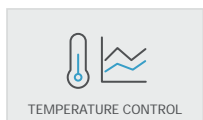


The information icon allows you to access the temperature control screen of the ventilation system and the Standby mode (recuperator operation disabled).

The window also displays contact details for the manufacturer.

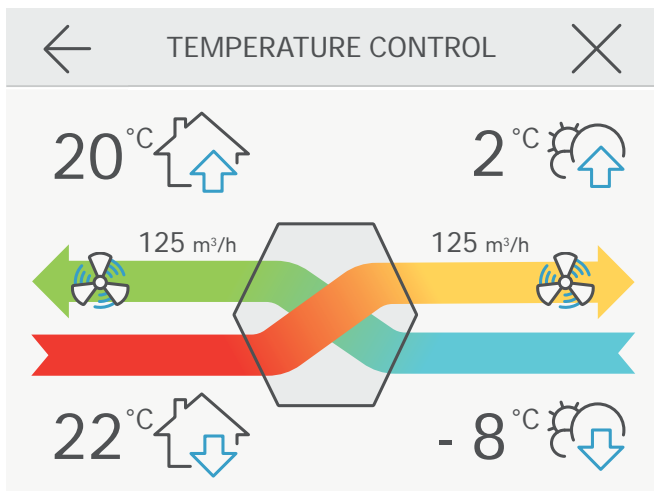


08.07.1 Ventilation system temperature control screen

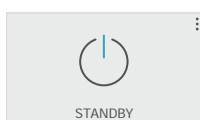


The following screen allows reading (in realtime) values of the temperatures measured by the temperature sensors installed in the recuperator and the amount of air flowing on the supply and exhaust (only with constant flow module)

exhaust (only with constant flow module)

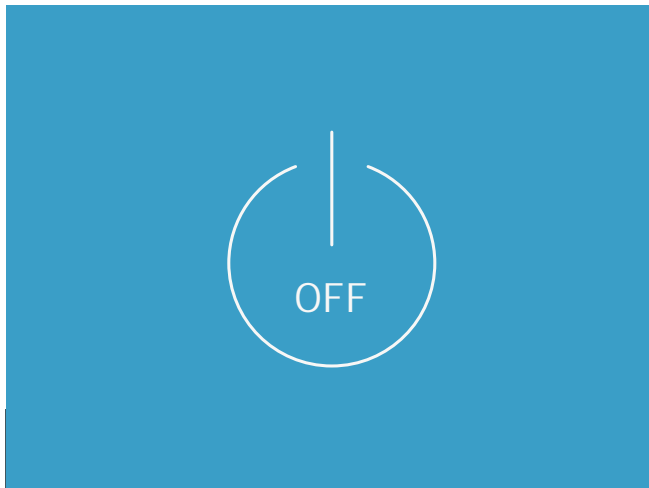


08.07.2 STANDBY screen



Selecting a standby button moves the device to the sleep mode where no fans or peripherals are operating. Only the start button is displayed on the screen. If there is no power supply voltage or sleep mode

is selected, all user settings are permanently stored in the controller's memory. They are loaded when the device resumes operation.



08.08 Alerts and messages

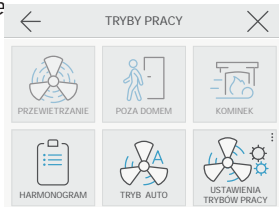
If the recuperator operates incorrectly or when the frost protection system is activated the main screen will display the message ③:

08.08.1 Defrosting

Problem: Low outdoor temperature - freeze protection mode of the heat exchanger has been activated - see item 02.05.

Solution: The mode is automatically deactivated when the temperature in the heat exchanger rises

Note! When DEFROSTING is active - modes: VENTILATION, OUT OF HOME and PURIFICATION OF AIR are not active.



08.08.2 Check filters

Problem: It's been 90 days since the last replacement of the filters.

Solution: Replace filters in the unit with new ones - see item section

08.08.3 Sensor damage

Problem: Damage to one of the sensors:

- NR 1 - Temperature sensor on intake
- NR 2 - Temperature sensor on exhaust vent
- NR 3 - Temperature sensor on air supply
- NR 4 - Temperature sensor on the exhaust

Solution: Call service.

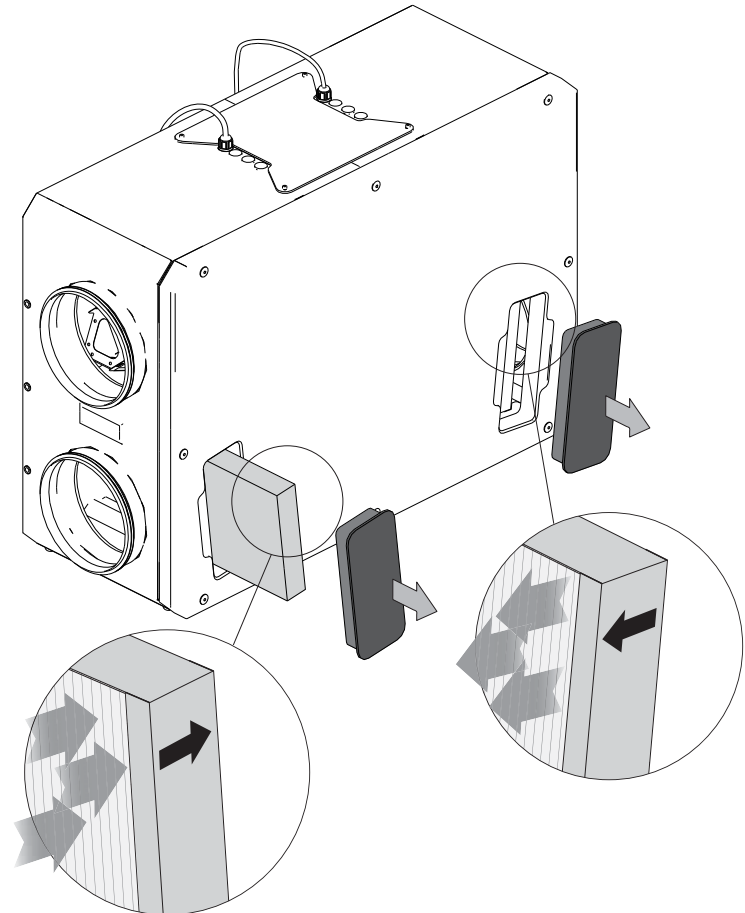
09 Service and maintenance

09.01 Filter replacement

The manufacturer recommends replacing the filters once every 90 days. This will be recalled by the alert set in the panel (see section 08.06.4 Filter Status Check).

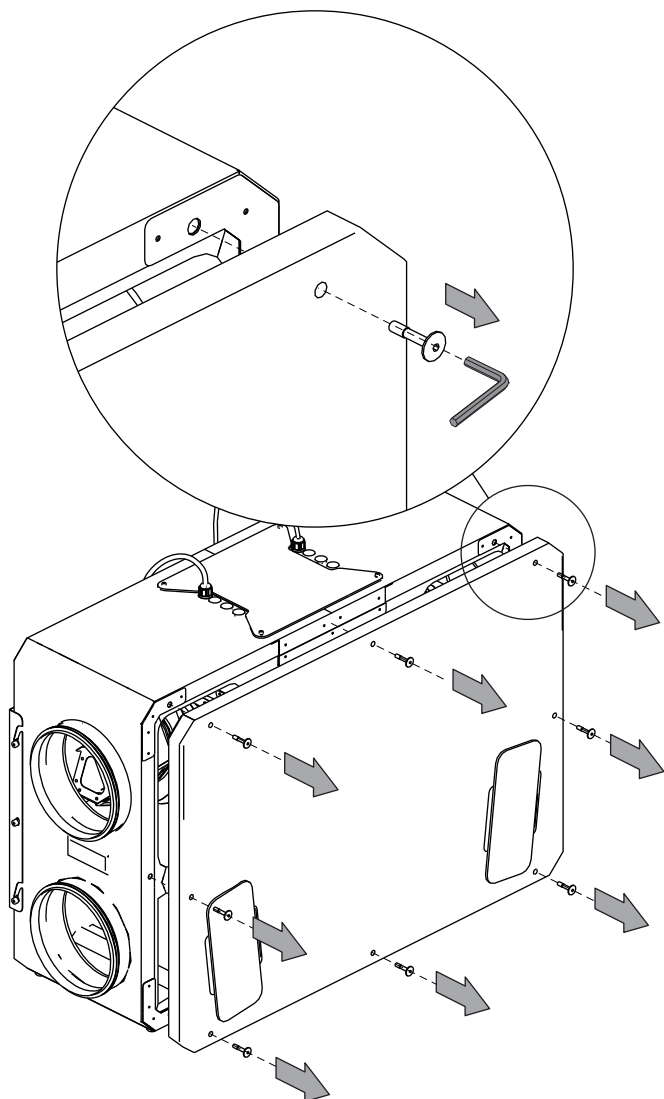
It is recommended that you use the original filters that meet the specified parameters. New filters can be purchased from example on the website: cennik.peflex.pl

When replacing or cleaning the filter, pay attention to the arrows on the filter label. They indicate the air flow.



09.02 Removing the recuperator cover

For service or maintenance/cleaning purposes, it is possible to remove the recuperator cover as shown in the figure below:



09.03 FAQ

If you have not found a solution to your problems in the manual above, please visit the website: reQnet.pl and the FAQ section.

10 Warranty Conditions

1. **REQNET** Ltd., Gdów No. 685, 33-420 Gdów, registered in the Register of Entrepreneurs of the National Court Register kept by the District Court for Krakow - Downtown Kraków Division XII Commercial National Court Register under the number KRS (Company registration number) 0000715979, using the number NIP (Tax Identification Number) 6832098917, REGON (Statistical Identification number) 369361930 (hereinafter as "**reQnet**"), as a manufacturer of recuperators of the "reQnet" brand of the "iZZi" (hereinafter as "**Device**") is a guarantor and under this document (hereinafter as "**Document**") provides a warranty of the Device, under the conditions indicated in document and for a period of 24 months from the date of purchase of the Device (hereinafter referred to as the "**Warranty Period**").
2. **The Warranty covers the Device, purchased and used in the Territory of the Republic of Poland and is granted only to the end user of the Device (hereinafter referred to as the "Customer"), who purchased the Device and who had the Device originally assembled.**
3. Installation and use of the Device must be in accordance with the Device's user manual and documentation provided with the Device.
4. reQnet will provide benefits under the Document provided that:
 - 1) a proof of purchase of the Device is presented;
 - 2) a filled warranty card of the Device is presented;
 - 3) the Device is installed and used in accordance with applicable laws, in particular fire and health and safety regulations, as well as reQnet indications from the Device's user manual and documentation provided with the Device
6. During the Warranty Period, reQnet undertakes to remove, free of charge, malfunctions and/or defects of the Device resulting from manufacturing defects of the Device (defects in materials or construction of the Device or parts thereof).
7. The warranty covers only the customer's right to request the repair of the Device or the replacement of defective parts of the Device with new ones.
8. The declaration of warranty claims covered by the Document is possible in relation to the malfunction and/or defects of the Device, disclosed and reported during the Warranty Period.
9. The warranty does not cover:
 - 1) Devices that do not have a serial number or those of which it is not possible to identify the serial number;
 - 2) consumables of the Device, such as filters;
 - 3) components directly related to the installation of the Device, such as, for example, mounting elements, ventilation ducts, peripherals, power and signal cables other than those supplied with the device.
10. The warranty does not cover defects and malfunctions of the Device, resulting from:
 - 1) installation of the Device inconsistent with the Device's User Manual and the documentation provided with the Device;
 - 2) use the Device in a manner incompatible with its intended purpose, applicable laws or reQnet indications contained in the operating instructions of the Device;
 - 3) mechanical damage to the Device by the Customer and the defects caused by this damage, including those resulting from improper protection of the Equipment during construction, repair and assembly work;
 - 4) performing service or modification or maintenance or repair or structural and technical changes of the Device by unauthorized entities;
 - 5) customer's application of inappropriate technical requirements for the Device or a defective or faulty electrical installation, including installation without adequate protection;
 - 6) random events, such as surges in the electrical system, lightning strikes, etc. and events caused by animals and insects;
 - 7) lack of suitable filters and their appropriate replacement or polluting the Device with building dust;
 - 8) other damage which cannot be attributed to reQnet as the manufacturer of the Device.
11. Reporting of irregularities or defects of the Device shall be made by the Customer in writing to the reQnet's registered office address or by e-mail to adres e-mail: biuro@reQnet.pl (hereinafter referred to as "**Notification**"). reQnet at no later date than 14 working days (Monday to Friday) from the date of submitting the Notification, will consider the Notification and inform the Customer about how and when the case will be handled.
12. ReQnet's warranty obligations shall be processed within 14 business days (Monday to Friday) from the date of consideration of the Notification by reQnet, taking into account that the Device located permanently at the place of use by the Customer is repaired by reQnet at this location within the agreed period between reQnet and the Customer, and therefore the above period may be extended. reQnet reserves the right to a possible extension of the above period also in the event of force majeure or the necessity to manufacture or buy the parts indispensable to perform the warranty service.
13. If, in the course of carrying out the repair as a result of the Customer's Notification, it is found that there has been a circumstance excluding reQnet's liability as guarantor, including under paragraphs 8 to 10 of the Document, reQnet will notify the Customer of the higher costs of the repair. After Customer acceptance of the costs, reQnet will repair the Device to the agreed extent.
14. Service activities related to periodic inspections, cleaning and maintenance of the Device, also carried out during the Warranty Period are carried out by reQnet at the customer's expense and order.
15. The warranty does not exclude, limit or suspend the rights of the Customer arising from the provisions of the statutory warranty for defects of the product sold.
16. For matters not covered by this Document, the provisions of the Civil Code shall apply.

Warranty card:

User Data	Name	
	Phone No.	
	Email address	
Installation address:		
Label:	<div style="border: 1px dashed black; width: 80%; margin: 0 auto; padding: 20px;"> <p>Label space</p> </div>	
Date of purchase:		
Installer name and address: (in case of self-assembly of the device leave a blank field)		
	Date and signature	
Measurement results of the performance in III gear:		
	Supply [m ³ /h]	Exhaust [m ³ /h]
User statement of having read the operating instructions of the device:		
	Date and signature	

